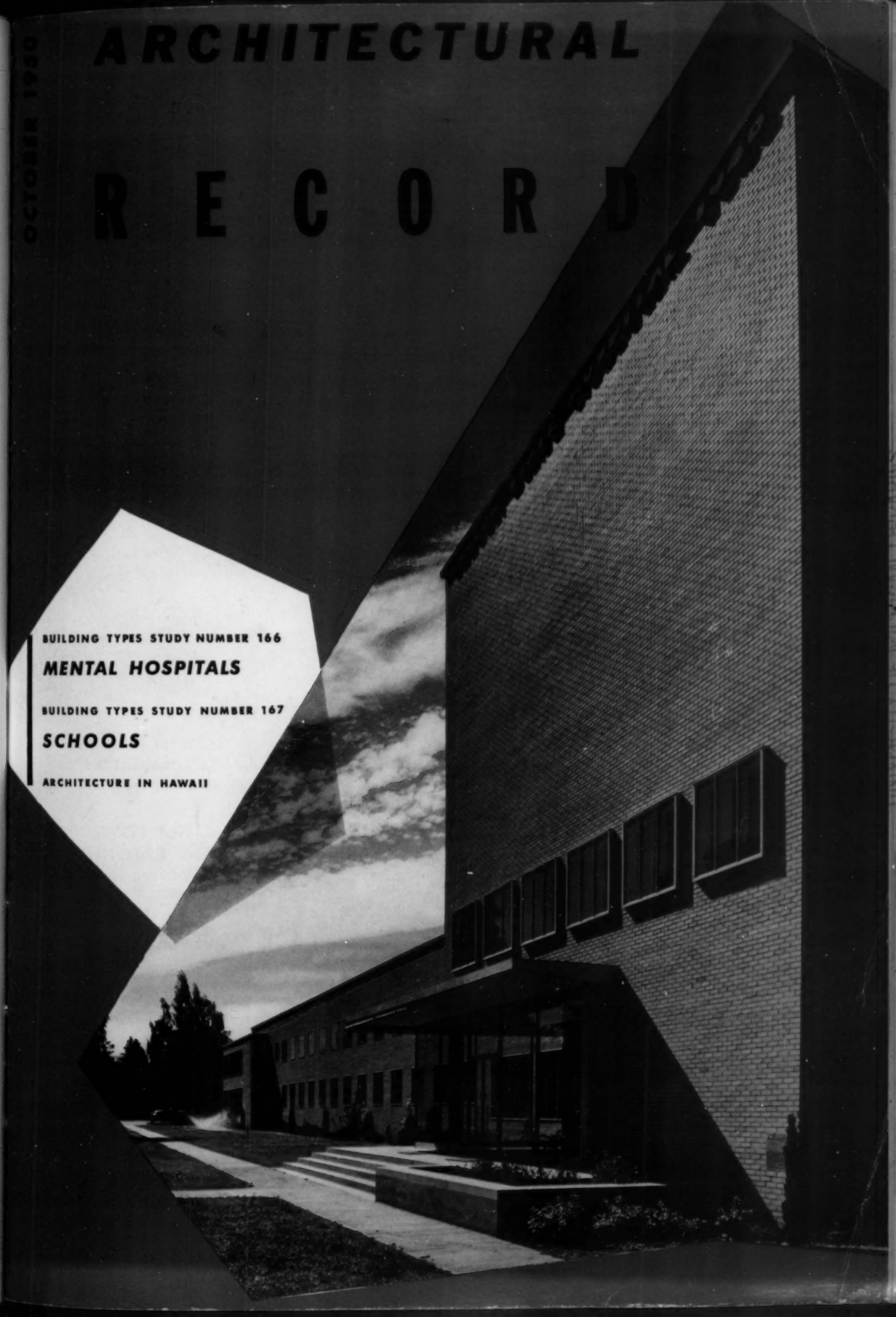
OCTOBER 1950

ARCHITECTURAL RECORD



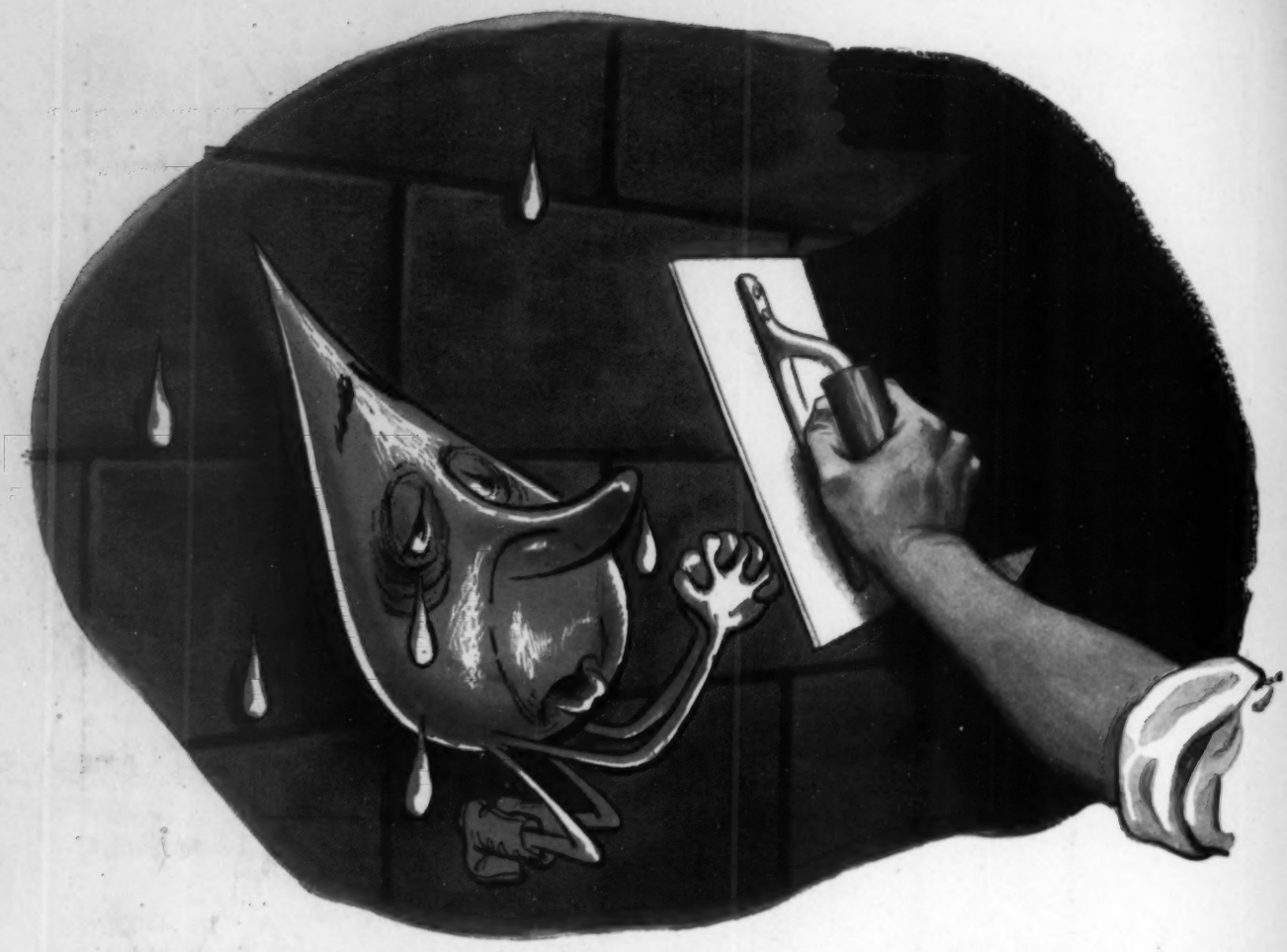
BUILDING TYPES STUDY NUMBER 166

MENTAL HOSPITALS

BUILDING TYPES STUDY NUMBER 167

SCHOOLS

ARCHITECTURE IN HAWAII



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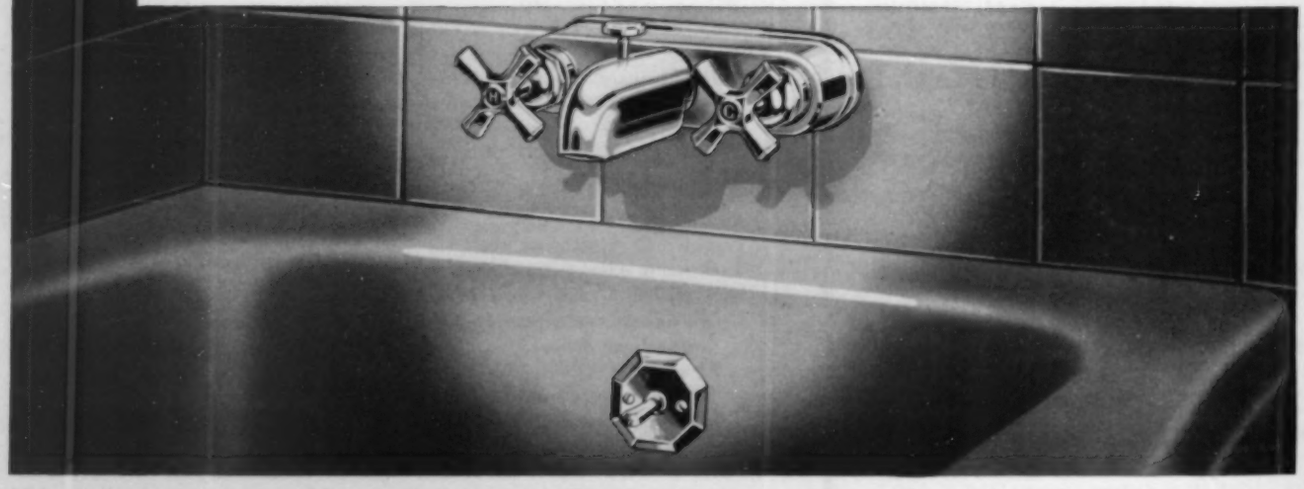

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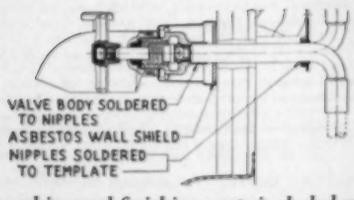

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CONSTRUCTION IN AN ARMAMENT ECONOMY

F. W. Dodge Corp. President, Thomas S. Holden, Analyzes Effects of Korean Crisis, Sees National Economy as Able to Absorb Increasing Demands of Military Program Without Inordinate Strain

UP TO MID-SEPTEMBER the mild credit restrictions put into operation by the government had no effect in dampening the boom in housing and in consumers' durable goods. In fact, the boom moved up to new heights on the stimulus of panic buying. Further tightening of credit will be necessary.

Accompanied by tax increases on personal income, credit tightening should begin to curb the boom as the current buying wave subsides.

Up to a certain point, this will make for a sounder housing market than we have had in recent months. Material prices and construction costs have been rising rapidly, and, in spite of peak production, some materials have been in short supply; these are conditions that invite a market reaction. Underlying the market situation has been the continuous decline since 1946 in the most important single factor of housing demand, the number of new family formations. The recent peak rate of housing production, overstimulated by easy housing credit, was fast pushing the housing market toward a surplus situation.

Military Power for Peace

But the Korean crisis rudely awakened the American people to some harsh facts of life. We are suddenly confronted with the proposition that to preserve our freedoms, to maintain our high and constantly improving living standards, and to fulfill our obligations of world leadership we must become a first-class military power.

History again reminds us that there can be no sustained peace and prosperity unless the richest and strongest nation is prepared to police the world, with such help as it can get from friends and allies. At best, we are in for a prolonged period of continuous war preparation, of readiness to meet attack in unexpected places at any time.

Strong in the consciousness of responsible leaders in our government is the conviction that our vital national purposes must be accomplished with minimum restriction of our freedoms, and minimum disruption of the civilian economy. It is necessary to demonstrate to ourselves and to the world that free peoples can win this world struggle without themselves adopting the methods of dictatorships.

High Productivity Cited

No nation at any time in history was better able to accomplish this than is the United States at the present time. We have not only the highest productivity yet attained by any people, but our records in World War II and the postwar period have shown that our industry has tremendous flexibility and adaptability, and unprecedented techniques for expanding productive economy. If time permits, we can superimpose a tremendous military program upon our civilian economy without inordinate strain.

In June the index of physical volume of production of durable goods was 236 compared with an average index of 139 for 1940, an increase of 70 per cent. Diversion of productive capacity to war purposes will be greatest in this class of manufacturing. Most of the important nondurables, including farm products, are in ample or in surplus supply today.

In the second quarter of this year goods and services were being produced at the annual rate of $268 billion. The amount of armament production thus far programmed by the government is a moderate fraction of that total.

The general conclusion, following a quick survey of the nation's production potentials, is that shortages of skilled man power are apt to become more serious than shortages of basic materials.

Since consumer spending has been at record high levels, a fairly considerable tightening of the collective consumer belt can be achieved without causing real distress. In the second quarter of this year, total personal consumption expenditures were at the all-time high annual rate of more than $184 billion; this is to be compared with $72 billion plus in 1940.

For valid comparison, however, the 1940 figure should be adjusted for price and population changes. Such adjustment indicates that current expenditures at present price levels for our present population would have aggregated $139 billion plus if today's consumption standards were just at the 1940 level. The margin of more than $45 billion, representing improvement of consumption standards, is greater than any rearmament program now contemplated short of total mobilization for global war.

Thus it seems to be indicated that, while the current boom in consumer durables will have to be cut back appreciably, it will still be possible to maintain sizeable volume of production in most durable lines. In particular, it should be possible to continue to meet necessary demands for new housing.

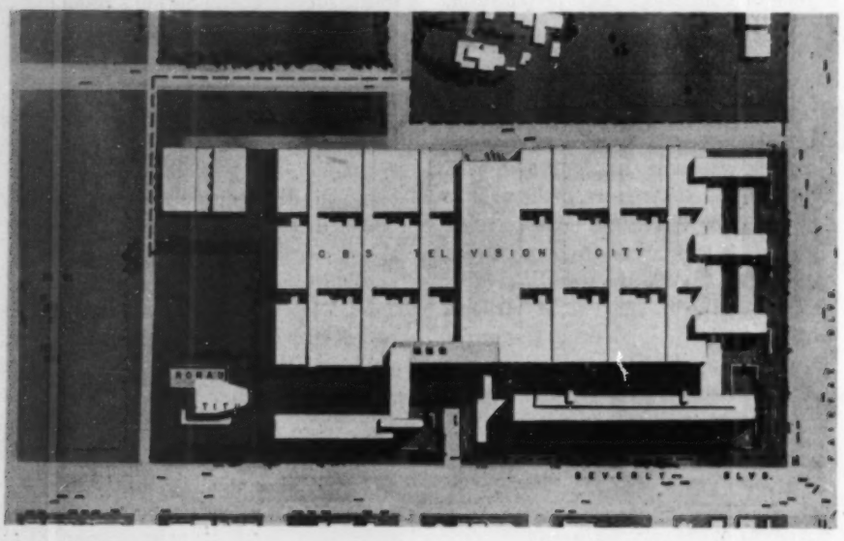
Basic housing demand continues at a relatively high rate. Although declining, new family formations continue currently at the estimated rate of 550,000 a year. This, plus other less important factors such as undoubling, replacements, fire and storm losses and so on, probably provide a continuing basic demand for 700,000 to 800,000 new nonfarm dwelling units annually to main-

tain adequate accommodations for our growing population. This would be about a third less than the 1950 rate of production, likely to run to 1,200,000 new non-farm units. There is as yet no indication that this much of a cutback is in prospect for next year.

Concurrent with government action to reduce housing volume, direct federal spending for public construction projects is slated for reduction; state and local governments are being urged to cut their programs. As the armament program progresses, there will arise needs for expanded manufacturing capacity as well as for various types of military construction. It is too early to estimate the extent to which such new construction demands will offset the cutbacks in boom-time classifications. Certainly civilian facilities like schools and hospitals will have high priority ratings.

Within the range of anticipated housing activity there are strong reasons for expecting a shift toward quality housing. For one thing, average families tend to be larger and war and postwar babies are growing up, so that many families will require more space than is afforded by the minimum-sized houses which have predominated in the production of the past five years. Stiffening of down-payment requirements will tend to favor families with adequate savings who have been waiting for an opportune time to build more spacious and better accommodations than those which they now have.

Thus far, the construction prospect indicates a considerable readjustment of program, part of which would in all likelihood have taken place even if there had been no Korean crisis. While the construction boom will be flattened, there is as yet no indication that volume will be so reduced as to cause major distress to the industry. This most flexible of all American industries will probably adjust itself to changed market conditions with a minimum of difficulty.



W. L. Pereira and Charles Luckman are architects for CBS' proposed $35 million Television City at Beverly Blvd. and Fairfax Ave. in Los Angeles. Preliminary land use study (left) has been submitted to City Zoning Commission. There will be a 500,000-sq-ft administration building to house some 3000 employes; three studio buildings; a bridging service building; and several supplementary structures, including other office buildings. Below: sketch simulates aerial view of development in relation to environs. Main building is 13-story (height limit) administration building, to be 650 ft long, only 65 ft wide so all offices will be "outside." Pan-Pacific Auditorium at left center

AUGUST CONTRACTS RISE TO ANOTHER ALL-TIME RECORD

CONSTRUCTION contract awards in the 37 states east of the Rockies in August set another all-time high with a total of $1,548,876,000, nine per cent above the previous record, set in July, and 15 per cent above the April 1950 figure.

The August total was also 71 per cent above the August 1949 figure, and the eight-month total for 1950 of $9,823,-205,000 was 56 per cent higher than the comparable figure for last year. The total of sq ft of floor area for the first eight months was 894,626,000, up 72 per cent over the comparable figure for 1949.

Residential awards in August were 12 per cent over July, 92 per cent over August 1949. Non-residential awards increased 11 per cent over July, 95 per cent over August 1949. Public works and utilities declined two per cent from July, but were eight per cent over August 1949.

ARCHITECTURAL LEAGUE PLANS SERIES ON ARTS

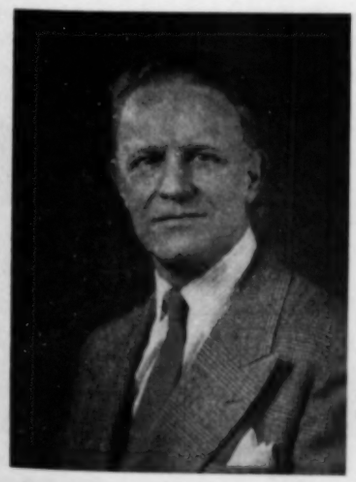
FORUM FOR MODERN LIVING," a series of 10 evening discussions of the arts and the contemporary scene, will be sponsored by the Architectural League of New York on Wednesday evenings from October 11 to December 13.

The discussions, open to the public by subscription, will be presented by panels including some 60 well-known persons in the fields of art, architecture and planning.

The topic for the first session, "Can the Arts Work Together?" will be aired by a panel composed of Joseph Hudnut, Henry-Russell Hitchcock, George Howe, Philip Johnson, and John Peter.

Subjects announced by League President Harold R. Sleeper and Publicity Chairman Charles Magruder for later discussions include: Must Our Architecture Be Sterile; Sculpture and Building; Painting as Decoration; Is Furniture Functional or Decorative; The Architect & Industrial Designer; New Textiles and Wall Coverings; Purpose of Landscape Architecture or Planting and Modern Design; Lighting and Color in the Home; and Widening Horizons.

Kaden-Kazanjian Studios



President Harold R. Sleeper

First Church of Christ, Scientist, for New Haven, Conn. Douglas Orr is architect

OFFICIAL URGES INCREASED APPRENTICESHIP ACTIVITY

APPRENTICE TRAINING in the construction industry must receive added attention from members of the industry itself if craft skills are to be preserved at high level, says Director W. F. Patterson of the U. S. Department of Labor's Bureau of Apprenticeship.

In a speech before the 34th convention of the Operative Plasterers' and Cement Finishers' International Association in St. Louis, Mr. Patterson explained that much of the legwork previously done by his Bureau's staff to aid in establishing apprentice training programs in the construction industry will now have to be redirected to crafts needing immediate expansion in the light of the national defense program. The construction trades will no longer have priority on the Bureau's time, he said.

Mr. Patterson called on 3239 local joint construction industry apprenticeship committees to increase their activities and concentrate on expansion of training facilities.

CHRISTIAN SCIENCE CHURCH UNDER WAY IN NEW HAVEN

TWO LARGE copper beech trees will frame a striking building of contemporary design when construction is completed on the First Church of Christ, Scientist, in New Haven, Conn.

Douglas Orr of New Haven is architect for the church, which will be set in the center of a plot having a frontage of 250 ft on Whitney Avenue.

The building, 83½ ft wide and 116½ ft deep, will be of reinforced concrete construction with brick facing. A feature of the exterior design will be a glass wall of the lobby facing Whitney Avenue. The glass will be framed by aluminum and polished purplish-red granite. The spire, which will terminate in a pyramidal shaft of aluminum, will house a chimes broadcasting room. There will be no basement and the auditorium will be on the second floor. It will seat 500 persons. With a built-in loud-speaker system to the outer lobby and Sunday School room, as many as 900 persons will be able to hear visiting lecturers.

On the ground floor will be a 300-seat Sunday School room. There will be a separate room for infants and a nursery for babies. The ground floor will also have committee rooms, clerk's office and the board of directors' room.

The building will also have the first radiant heating system to be installed in any church in New Haven. A forced air ventilating system will be installed to provide ample fresh air either heated or direct from outside without admitting dust or noise.

FELLOWSHIPS IN HOSPITAL PLANNING SET UP AT YALE

TO STIMULATE interest in hospital planning, the Magnus T. Hopper Memorial Fellowships in Hospital Architecture have been established in the Yale Department of Architecture.

Chia-Yi Jen of Tientsin, China, has been chosen as the first recipient. He will use the Fellowship to complete his work for a master's degree in architecture at Yale.

One or two Fellowships to last one year will be made available every other academic year beginning in January 1951. Basis for selection of Fellows will be a hospital design problem assigned as a competition to advanced students by the Department. An architectural critic in residence and other professional advisers will be available to students.

Completed designs will be judged by a jury of architects and hospital consultants. The winner will be permitted if he chooses to take the Fellowship year as one of the two years required for a Master of Architecture degree. During his Fellowship year, the Fellow will devote himself to the study of hospital design, to the examination of existing examples, to the preparation of a design thesis and to related subjects.

Five Fellowship units of $2500 each have been set up so far by friends of the late Doctor Hopper through the efforts of Charles F. Neergaard, of Neergaard, Agnew & Craig of New York, consulting service in hospital planning, organization and management. Mr. Neergaard is expecting to arrange several more units so that the program can continue for many years to come.

The Fellowships are the tribute of Doctor Hopper's associates to a long and distinguished medical career marked by a keen interest in all phases of hospital planning and administration.

Doctor Hopper, who died last May, was medical director of the Carson C. Peck Memorial Hospital in Brooklyn from its foundation to his retirement in 1948. This hospital, established as a memorial to a Woolworth Company vice president by his widow, established many new standards in its design, organization and service to the public. It was the first institution in the country to cater primarily to the economic middle-class and treated a large proportion of its patients at less than cost without the stigma of charity. Doctor Hopper played a major role in the planning of the hospital and in its new conception of service.

$6½ MILLION REDEVELOPMENT PROGRAM READY FOR START IN TROY, NEW YORK

THREE PUBLIC HOUSING projects which will add 500 dwelling units to the local supply at an estimated cost of $6,598,890 probably will be under way soon in Troy, New York.

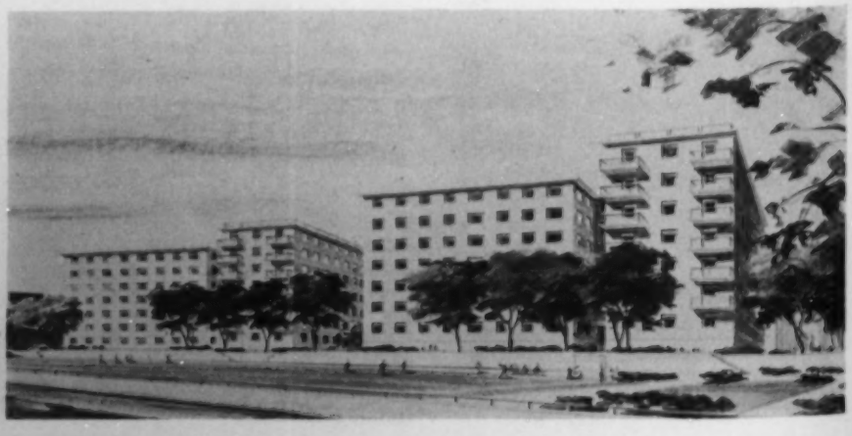
City officials have won approval of a new plan to transfer a portion of the slum clearance and urban redevelopment project announced earlier for execution under Title I of the Federal Housing Act to Title III (urban housing). This will mean an additional half million dollars in funds and more importantly, it will mean that federal funds will be available for the housing projects themselves.

Reisner and Urbahn, New York architects whose preliminary plans for the projects already have been approved, report that ground-breaking probably will start in about a month.

A six-and-a-half-acre site on the riverfront (just south of the Congress St. bridge which spans the Hudson from Albany) will be cleared of the old buildings which make it one of Troy's major eyesores. Two eight-story buildings of fireproof construction will be erected here to house 122 families, and nearly three-fourths of the site will be developed as park area (under Title I).

The largest of the three projects, to provide 282 new dwelling units, will be located in the Corlis Park section at the north end of the city. There a row house scheme has been chosen. All the units have been given foyers for circulation privacy, and the architects have planned a three-bedroom unit which has all the bedrooms on the second floor. The extra space needed is provided by projecting out across the entire width of the front of the building a two-and-a-half-ft overhang.

A midtown site near Prospect Park will have six three-story fireproof buildings containing 96 units of from three-and-a-half to six-and-a-half rooms.



Above: photo of rendering shows buildings planned for Corlis Park site; below: eight-story apartment buildings on riverfront site will be Troy's highest

THE RECORD REPORTS

NEWS FROM WASHINGTON *By Ernest Mickel*

Government and Industry Eye Early Reaction from Field on Effects of Credit Curbs; Civil Works Program Curtailed

THE HOUSING OUTLOOK has been getting a lot of attention inside Washington and out. The history-making boom had reached its peak in July, the biggest month ever for home building; and by late summer the earliest reports on effects of the initial credit restrictions were beginning to trickle in.

They inspired a flood of commentary, interpretation and prediction which had one basic area of agreement: fewer houses would be produced from now on.

How much of a drop would result from the government's "braking" action and how well the industry would adjust to a tapering market were questions that were not so glibly answered.

It was still too soon to attempt any considered judgment on the basis of the scattered reports from the field; and short-term reactions might be very misleading for the long view.

The first effect appeared in a rush to buy houses, with many people apparently hurried to a decision by the urge to get under the wire while they could.

In some quarters the curtailment was seen as a welcome corrective for a housing market regarded as over-stimulated by government financing. In this view, the Administration's action may simply have preceded a buyers' reaction that would also have meant the crest had been passed.

The Administration seems committed to the view that maintenance of a high volume of housing is desirable so far as the mobilization program permits; and government and industry in general are agreed on the importance of maintaining the strongest possible civilian economy as the basic answer to the challenge of communism.

These were some signs of the early confusion in the housing climate:

• Applications for Federal Housing Administration mortgage insurance commitments for new homes declined 29 per cent during the three-week period after the credit controls were instituted (on July 19). Applications for large-scale rental developments also dropped.

• The builders were shelving plans for thousands of homes throughout the country. This was a temporary action, they said, and represented caution until a clearer picture of international actions and federal government reactions could emerge.

• Applications for GI housing loan guarantees through the Veterans Administration, actually at a higher rate during the first two weeks of August than the record peak attained in July, were considered by housing officials to represent large amounts of construction planned or executed before restrictions were instituted. The slow-down was expected to be reflected in GI business once the earlier activity had caught up.

• Field reports from government sources pointed altogether to considerable back-up in volume by early Fall. Federal officials have estimated that housing starts will drop 25 to 50 per cent below the midsummer peak.

• The private home builders themselves, appraising information obtained from the best sources, were expecting present construction to be cut from 25 to 40 per cent. A National Association of Home Builders report to its members said an "informed guess" on 1951 starts would be 750,000 to 900,000.

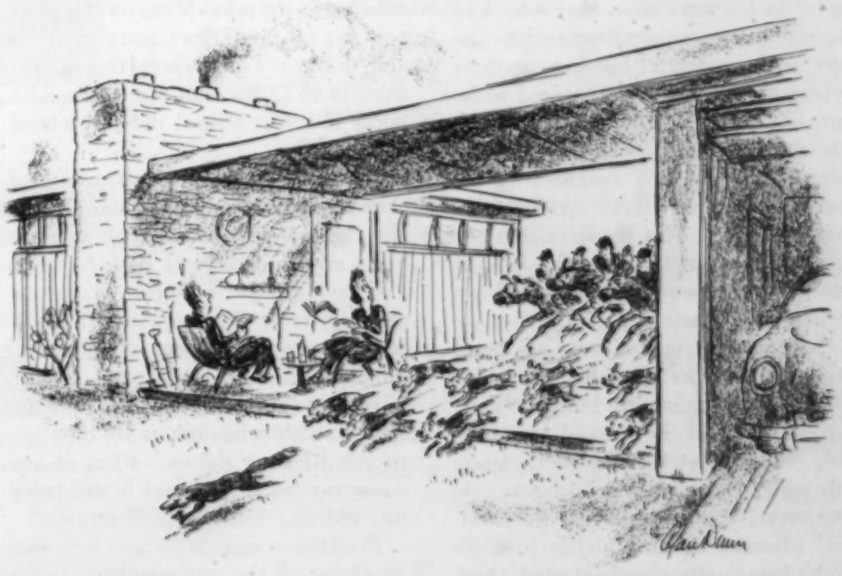
July Peak Reported

The Bureau of Labor Statistics reported that July was the best home-building month on record. According to preliminary estimates, 144,000 new permanent non-farm dwelling units were started that month. The activity brought to almost 839,000 the number of units begun during the first seven months of the year.

The housing agency had been advised by the home builders that this staggering volume of work could drop to a mere trickle next winter unless the government is fully aware of industry plans for the months ahead. The National Association of Home Builders asked that curbs be adjusted accordingly.

Commissioner Franklin D. Richards of the Federal Housing Administration has assured the industry that his agency is prepared to adjust valuations from time to time in accordance with cost of construction and the desired volume of housing construction. It is plain now that the number of houses the federal officials desire will be increased or decreased with the strength of the war effort. Volume will be kept on a quantitative target when that target is determined.

The N.A.H.B. has surveyed its membership in an effort to get the best information on what lies ahead for dwelling construction. Federal officials are relying on data from field reports and other sources. Housing Administrator Foley has turned to his National Housing Council for an evaluation of industry reaction to government moves. This body is composed of the heads of the three Housing and Home Finance



— Drawn for the RECORD by Alan Dunn

WASHINGTON

(*Continued from page 17*)

Agency constituents — Federal Housing Administration, Public Housing Administration and Home Loan Bank Board — and representatives of the Secretaries of Commerce, Labor and Agriculture departments. Also on the Council are delegates from the Veterans Administration and the Reconstruction Finance Corporation. Together, these agencies are bringing latest field reports to frequent Council sessions in an effort to give the group a detailed but well-rounded account of the local effects of the credit curbs.

Other Influences

There are other fields in which the federal government can pull the strings that regulate construction activity. The new economic controls measure, the Defense Production Bill of 1950, is a category apart with its extensive optional powers for allocating the supply of all building materials on a priority basis. The architects and contractors will be looking increasingly to the Commerce Department in this respect.

But the moves made in government circles before the new bill was enacted pointed the way toward ultimate control procedures.

Field offices of the Federal Housing Administration have been instructed by the FHA Commissioner to confine their new mortgage insurance commitments to housing needed in the current market only. At the same time, they were told to channel new commitments into the low and moderate housing brackets where the agency feels the need to be greatest. These instructions also carried the word that commitments will now be issued only in such numbers as the builder can put under construction without delay. This means within the life of the commitment, which is eight months on new work and four months on existing construction.

As a result, commitments are being limited in number generally, but particularly in the higher cost brackets. Field offices were told they should not act in any way to restrict builders' program planning. Commissioner Richards said the action was taken to gear the builders' planning to their ability to finish those home units already started. Qual-

(*Continued on page 20*)

Panda photography

Factory for Canadian Nashua Paper Co. Ltd., Peterborough, Ont., was among buildings chosen for recent traveling exhibit on Canadian arts. Gordon S. Adamson, Architect

NEWS FROM CANADA *by John Caulfield Smith*

Builders Face Shortages In Materials, Manpower

THE PLIGHT of builders and contractors in Canada is grim. They are faced with a shortage of men and materials which may continue for three years."

So Robert Drummond, president of the Canadian Construction Association, sums up the building picture.

Builders are struggling with rising costs and shortages. The situation is reflected in the prices home owners must now pay for dwellings. Central Housing and Mortgage Corp. reports that it costs from 10 to 12 per cent more to build a house this year than it did just a year ago.

Material shortages, both real and threatening, are hampering many builders. Cement is in short supply in some areas, and concrete block manufacturers are having their troubles in meeting delivery dates. With demand still outstripping supply, prices of masonry, plumbing fixtures, paint and lumber have jumped. Supplies and deliveries on steel are tightening, but as yet there are no munitions or defense orders of any consequence, and all steel is still going into ordinary domestic consumption.

In addition, wage hikes have been won by almost all the major building trades in the past year.

Steel Control Expected As Anti-Inflation Move

THERE IS every chance that important measures to help fight inflation will be introduced by the Canadian Parliament. One goal will be to restrict capital expenditures, thus diverting manpower and products into the arms program and into general lines of goods for civilian use.

One of the ways in which this can be accomplished is by reestablishing control over steel supplies. Steel is the essential commodity of a capital program; and if it is controlled, the federal government can easily dictate expansion or contraction as desired. Actually, steel control dating from World War II was only discontinued in Canada last March 31.

The government has announced already that it will set a good example. No more public buildings will be erected unless they are for the defense effort. It is not expected that there will be any interference with private projects now under way. Housing projects probably won't be affected, but big new factories may have to prove they're essential before they can be sure of securing steel with which to build, and some other types of buildings may also feel the pinch.

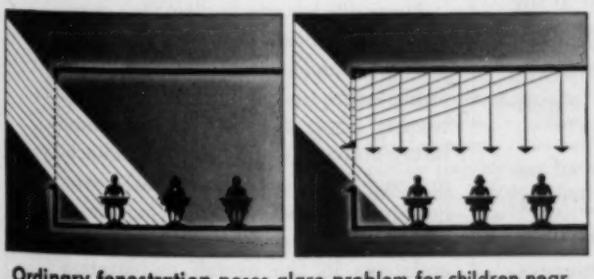
(*Continued on page 236*)

Now—better light control for all types of buildings . . . through Daylight Engineering

Standard Oil Co. (Indiana) building in Hammond, Indiana. Beauty of the fenestration design is kept intact by Insulux Glass Block. No shades, blinds or awnings mar its symmetry. Holabird & Root & Burgee, Chicago, architects.

St. Theresa School, Houston, Texas. Architects Golemon & Rolfe of Houston use Insulux Fenestration to bring more light to children and maintain clean lines of design.

Better light for children is obtained with Insulux Fenestration for this modern school—designed by architects Kivett & Meyers, Kansas City, Mo.



Ordinary fenestration poses glare problem for children near window, not enough light for rest of children. Light-directing Insulux Glass Block Number 363, re-directs light UP to ceiling, spreads it evenly.

By use of entirely new daylight optical principles, Insulux Glass Blocks Numbers 363 and 365 give you the means to provide even, diffused lighting and eliminate bright, glaring contrast in any type of building. Diagram at left shows how this works.

With this revolutionary advance in daylight control, you can design a fenestration for maximum light and beauty. Occupants will no longer need blinds and awnings that shut out the free daylight and destroy the architect's design.

Let our Daylight Engineering Laboratory and Staff give you more information or assist you in adapting Insulux Fenestration to your specific needs. Write: Daylight Engineering Laboratory, Dept. AR10, Box 1035, Toledo 1, Ohio. (*Insulux Division, American Structural Products Company, subsidiary of Owens-Illinois Glass Company*)

INSULUX GLASS BLOCK

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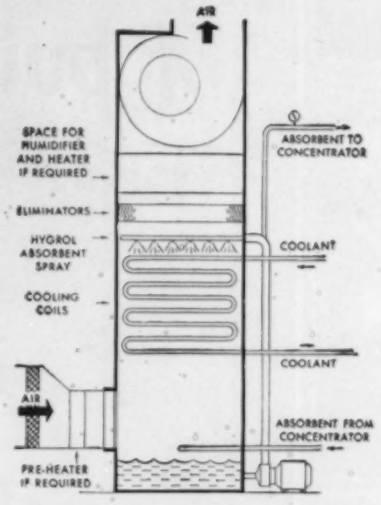
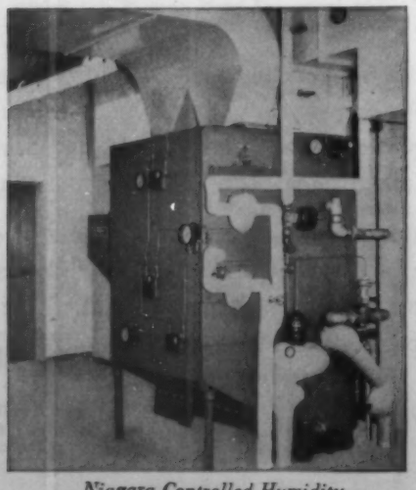
Because it absorbs moisture from the air directly, the new Niagara Controlled Humidity Method uses less, or no, mechanical refrigeration for dehumidifying. You save first costs and installing of heavy machinery. You save space, maintenance expense, power. You get easier, more convenient operation.

Using "Hygrol" hygienic absorbent liquid, this method gives complete control of temperature and relative humidity. Especially, it is a better way to obtain dry air for drying processes, packaging hygroscopic materials, preventing moisture damage to metals, and obtaining better quality for chemical process products and food products—or in obtaining better results in comfort air conditioning for office or laboratory at lower refrigeration costs.



NIAGARA CONTROLLED HUMIDITY METHOD — FLOW DIAGRAM

Food Packaging under Controlled Humidity


Niagara Controlled Humidity Air Conditioner

The diagram shows how filtered air is dehumidified by passing thru a spray of "Hygrol"—a liquid absorbent which removes air-borne moisture. This liquid is hygienic and non-corrosive; it contains no salts or solids to precipitate and cause maintenance troubles. It is continuously re-concentrated at the same rate at which it absorbs moisture, providing always the full capacity of the air conditioner, automatically.

Units provide a range of capacities from 1000 to 20,000 C. F. M. Multiple unit installations are in use successfully. Records of results are available. For further information, write Niagara Blower Co., Dept. AR, 405 Lexington Ave., New York 17, N. Y.

THE RECORD REPORTS

WASHINGTON

(*Continued from page 18*)

ity processing of commitments continued to be the keynote in FHA field offices.

A Richards statement made late in August casts further light on this action. "It is particularly sound at a time like the present," he said, "for builders to channel production into houses that are actually needed, rather than higher cost housing where demand may be created through promotional efforts."

He made these other points:

1. The Administration wants a high level of production — as high a level as possible consistent with present conditions.

2. There is a tremendous need for lower-cost housing and housing for minority groups.

3. Although a reduction from the all-time record high volume of the first six months of this year is necessary in view of conditions, there is still reason to expect that there will be a substantial volume of construction.

Architects Prepare

Fully aware of the potential demands upon the architectural profession inherent in the developing international situation, the American Institute of Architects continued its moves to alert its members.

This action took several forms. The A.I.A. members were surveyed as to their former military and war experiences. This was done with a view to bringing the headquarters records up to date. Organization officials at the Octagon are busy correcting the roster on architectural activity in the past.

These officials are finding time, however, to establish important new federal government contacts and more firmly secure the old ones. These are extremely important. They look toward future activity of the private architects in designing defense needs. Washington headquarters said it is moving ahead rapidly with plans for participation of architects in the overall mobilization effort.

Members of the Institute have been urged to prepare records and bring their own files up to date on previous military and defense experiences. They are also

(*Continued on page 22*)

Multi-Clean Bakery Preserver being applied. Either a lambswool applicator or a short-string mop can be used.

Finished, this gleaming floor resists heavy traffic, has a non-slip surface and meets sanitation standards.

Sensational New Treatment for Wooden Bakery Floors

A NEW FLOOR PRODUCT, Multi-Clean Bakery Preserver, was recently applied with phenomenal success at Regan Brothers Company, a leading Minneapolis bakery . . . and the method was described before the Association of Bakery Engineers at their national convention. Specially formulated for sub-surface treatment of wooden bakery floors, this new finish penetrates deeply and seals the wood tightly, reinforcing the fibre and cell structure. It combats the growth of mold and other bacteria, strongly resists heavy bakery traffic, is unaffected by fats, oils, water, alkalies and sugars and makes possible new savings in maintenance time and costs.

All requirements for sanitation and appearance were met with speed and ease by routine dry-mop sweeping and periodic steel wooling. Wet mopping to remove frosting and other sugar products is permissible without weakening the floor's finish. The actual case history is available upon request.

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The Multi-Clean Method described above is one of many new methods included in a series of Maintenance Manuals prepared especially for architects' use. These Manuals, furnished upon request, contain detailed instructions for the proper care of every type of floor . . . wood, concrete, rubber tile, terrazzo, asphalt tile, linoleum . . . in every type of building, old or new. They outline step-by-step procedure for specific floor problems . . . give you instant reference for keeping floors safer, better looking, longer lasting. Write for the complete series today.

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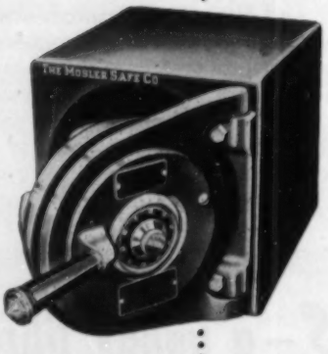

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THE RECORD REPORTS

WASHINGTON

(*Continued from page 20*)

requested to update any files on their activities that may be in the hands of government agencies. Further, the Octagon advises that local chapters strive to place their members on any civilian defense committees formed in their own communities.

One of the important A.I.A. activities in the current mobilization is its contact with the Air Forces for preliminary discussions on methods of selecting architects to prepare plans for air-field development. All this is in connection with the Air Forces' so-called master plan for airfield expansion. The military service made the initial contact with the architects, calling them in for consultation on methods of study.

Civil Works Curtailed

Congress acted to impose further restraints on civil works. This move in the conference committee considering the big appropriations bill was prompted largely by the Truman letter of one month before asking a review of all civil works programs.

Under the conference committee edict all civil works projects of the Army Corps of Engineers — rivers and harbors and flood control — would be reviewed to insure that no new projects were initiated unless they contribute importantly to the war effort. Furthermore, only those projects currently under construction which meet one or more of the following specific criteria would be permitted to continue during partial mobilization:

1. The project must include development of power.
2. The project must provide industrial or municipal water supply in critical areas.
3. The project must be a dam and reservoir where closure is under way or has been effected and it then could be completed to a point of useful operation.
4. The project must be important as a harbor or waterway.
5. The project must protect important industries or major food-producing areas.
6. The project must be possible of completion in the 1951 working season. Where termination costs would consti-

(*Continued on page 24*)

NEW

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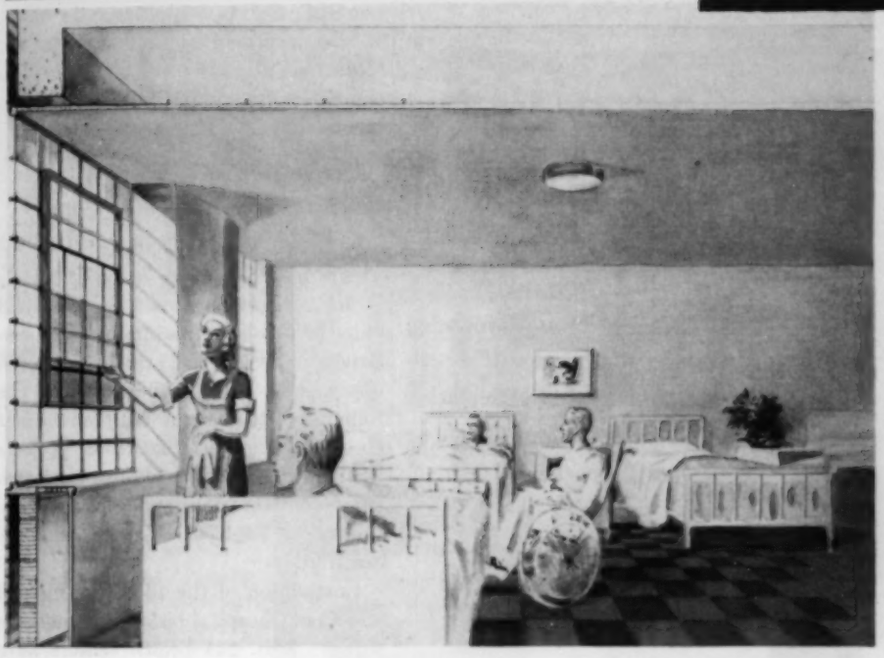
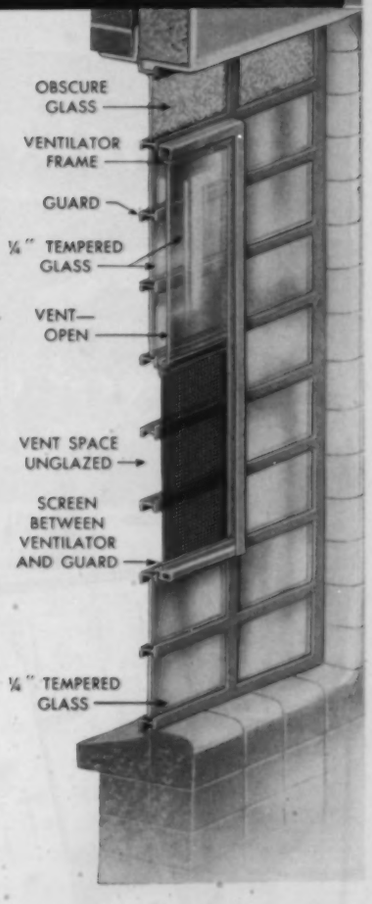
THE Bayley SAF-T-GARD WINDOW — plus SAFETY!





The scientifically planned and designed window for hospitals dedicated to rehabilitating the mentally ill

Authorities governing mental hospitals have long questioned the established practice of using windows with ventilators that swing into the room, or windows with the old-style heavy guard protection separate from the window. Special concern is with windows in corridors, hospital wards, offices, or any other location where they create an injury hazard to patients and staff members; or where sight of bars separate from the window is aggravating to the patient.

Bayley engineers, backed by 20 years' specialized experience in design and manufacture of institutional windows, have now developed the SAF-T-GARD WINDOW with a *vertically* sliding, screened, super-imposed ventilator assembly that overcomes these hazards. Not only does the SAF-T-GARD meet this demand of mental hospital authorities, but also it retains all the highly prized features of the widely used "Bayley Guard-Window-System." These, coupled with many additional improvements in this new window, assure maximum light, air, and vision, with extra safety, detention-free appearance, and low-cost maintenance.

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WASHINGTON (*Cont. from p. 22*)

tute an appreciable economic loss, the work in place would be damaged if not protected, or if relatively small amounts of additional work would make the project fully effective, it could then go ahead.

7. The project must involve almost entirely the movement of earth such as channel improvements or levees and could not compete in the use of critical materials.

8. Maintenance of completed projects, advance planning of selected authorized projects and the survey program all would be permitted to continue.

The tone of the committee attitude was expressed in this statement: "With respect to those projects that meet the above criteria for continuation of construction, each individual feature of the project will be examined to determine whether it can be deferred without detriment to the major purpose of the project or to the work in place."

The Army engineers took a quick look at their schedules when word of the committee action became known. They found $74 million worth of civil works projects immediately that would not qualify under the criteria outlined. They said a much larger quantity was sure to be included.

The committee's action was not written into the appropriations bill as actual legislation; for then it could have been objected to on the floor as being out of place in a measure appropriating funds. It was incorporated in the conference report as "the intent of Congress," an expression that would be considered no less binding.

Hospital Construction Booms

A review of the National Hospital Program administered by the U. S. Public Health Service showed the estimated value of new hospitals approved for construction during the first half of 1950 approaching the $1 billion mark. The roundup of program activity for the first six months stated that 1368 projects costing $952,679,194 had been approved. The federal contribution to this construction will be $344,741,945, approximately one third.

Completion of the 1368 projects will add 65,601 hospital beds to the nation's supply. Also, 244 health centers have been given the go-ahead under the same program.

At midyear 180 of the projects had been completed. These cost $52,216,168 and brought 4469 new beds into the inventory. The 781 hospitals still under construction as of July 1 were estimated to cost $599,496,132 and will furnish 41,113 new beds when completed. Finally, the other 407 hospital buildings given initial approval by the health agency, assuring eventual construction with the federal contribution, are estimated to cost in the aggregate $300,966,894 and will supply 19,992 new beds.

Activity to a large extent has been concentrated in the South, where the need for new hospitals has been greatest. The number of total projects per state runs from as few as two in the District of Columbia and three in Nevada, up to 100 in South Carolina and 102 in Mississippi. Every state has at least two projects on the approved list and there are one for Alaska, two for Hawaii, 14 for Puerto Rico and two for the Virgin Islands.

(*Continued on page 26*)

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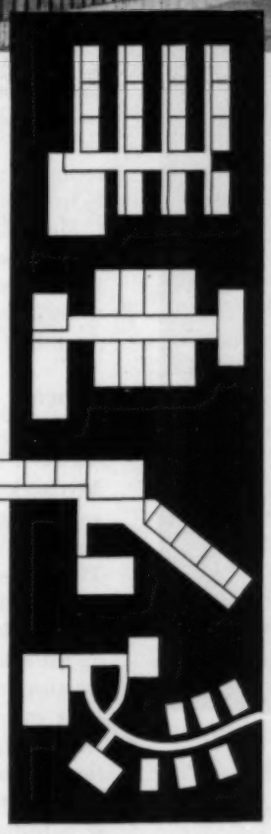

FINGER or "tree" type school; rooms oriented to sunlight on trunk corridor and branches; may be extended easily.

CENTRAL CORRIDOR construction; rooms connected to straight-line corridors; short communications lines.

DOUBLE WING plan, with lines of classrooms branching off from a central hub of school buildings.

CAMPUS plan, with various classrooms and buildings connected only by sidewalks.

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WASHINGTON (Cont. from p. 24)

Here are some of the higher state totals: Alabama, 35; Arkansas, 28; Florida, 27; Georgia, 70; Kentucky, 42; Louisiana, 43; North Carolina, 61; Tennessee, 29; Texas, 85. Other high approval figures include 56 projects for New York, 40 for Indiana, 44 for Ohio, 42 for Oklahoma and 40 for Pennsylvania.

Meanwhile, Carl Gray Jr., administrator of veterans' affairs, said following a conference with President Truman that there would be no cutback in the present construction schedule for VA hospitals. This is a $900 million program. There had been speculation on the subject prior to General Gray's announcement, and ever since the President sent his letter late in July instructing 14 agencies and departments to review and modify their civil works programs. But General Gray said the President assured him the orders would not apply to construction of VA hospitals.

As of August 1, 19 VA hospitals had been completed, 47 were in progress. Construction contracts had been awarded on 38, and design was completed but contracts not yet awarded on one other. Design was in progress on six and not yet started on two others.

Late in August there still was no official public word from the National Security Resources Board on what criteria the VA architectural division was to use in redesigning certain projects. Earlier the division had stopped work on plans and specifications for new hospitals in Washington, D. C., Cleveland and San Francisco. The halt came after orders were issued by the NSRB. It was said at the time that the buildings might be redesigned to make them bomb-resistant. Such a course would entail terrific additional expense and radical project changes involving the elimination of windows and strengthening of reinforced concrete walls. It still was believed that underground construction as a solution to the problem was out as a strong consideration because of inflated cost and technical problems that would be hard to overcome.

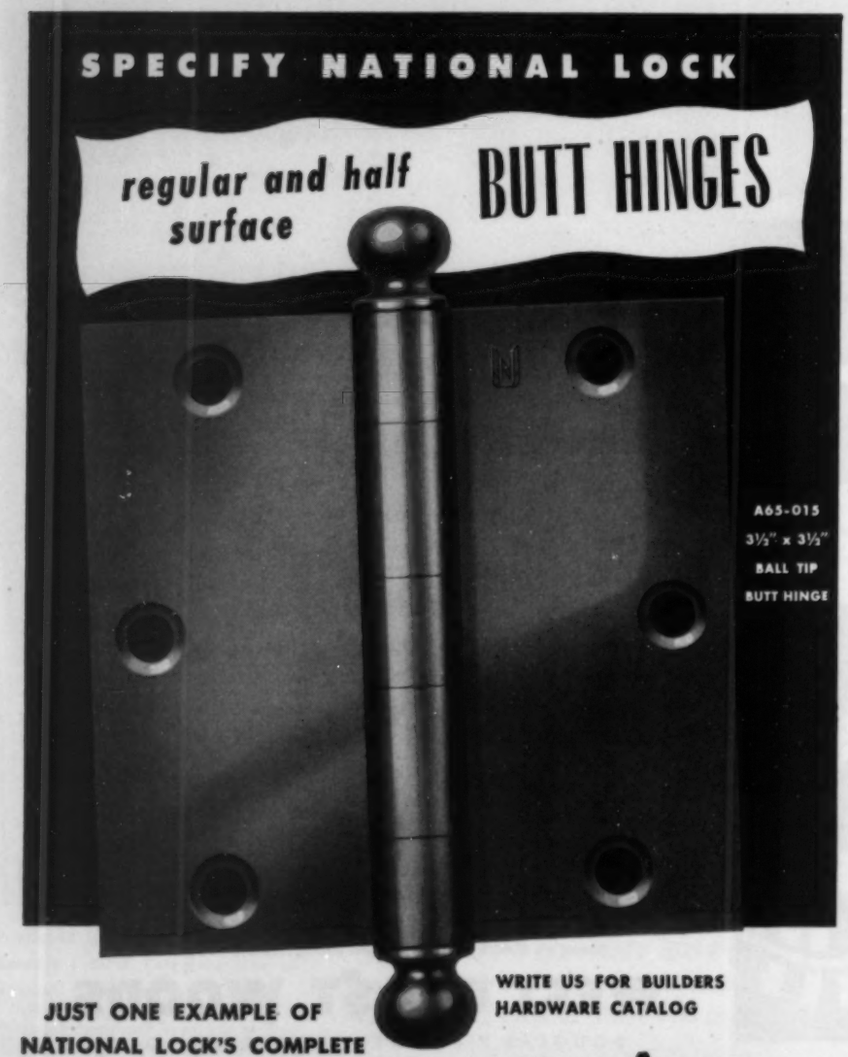
Meanwhile, the Army Corps of Engineers opened bids in Pittsburgh on the 750-bed general medical hospital to be constructed there (bids were opened August 29).

Shorts

• The Senate Banking Committee considered a bill by its chairman, Burnett Maybank (D-S.C.) which would reinvoke the mortgage debt moratorium extended to many World War II veterans. This measure provided that the courts should rule to what extent a drafted man should be relieved on the payments on his home mortgage while in service, whether he should be totally or only partially exempted. The Maybank bill had an imposing title: "To strengthen national defense by affording further relief to persons in the military service of the U. S. through suspension of enforcement of civilian liabilities or obligations secured by home mortgages or by similar security arising out of the ownership of certain residential real property and for other purposes."

• Important aspect of the Lumber Survey Committee report to the Commerce Department was its prediction that builders will use more lumber in the third quarter of 1950 than in the previ-

(*Continued on page 196*)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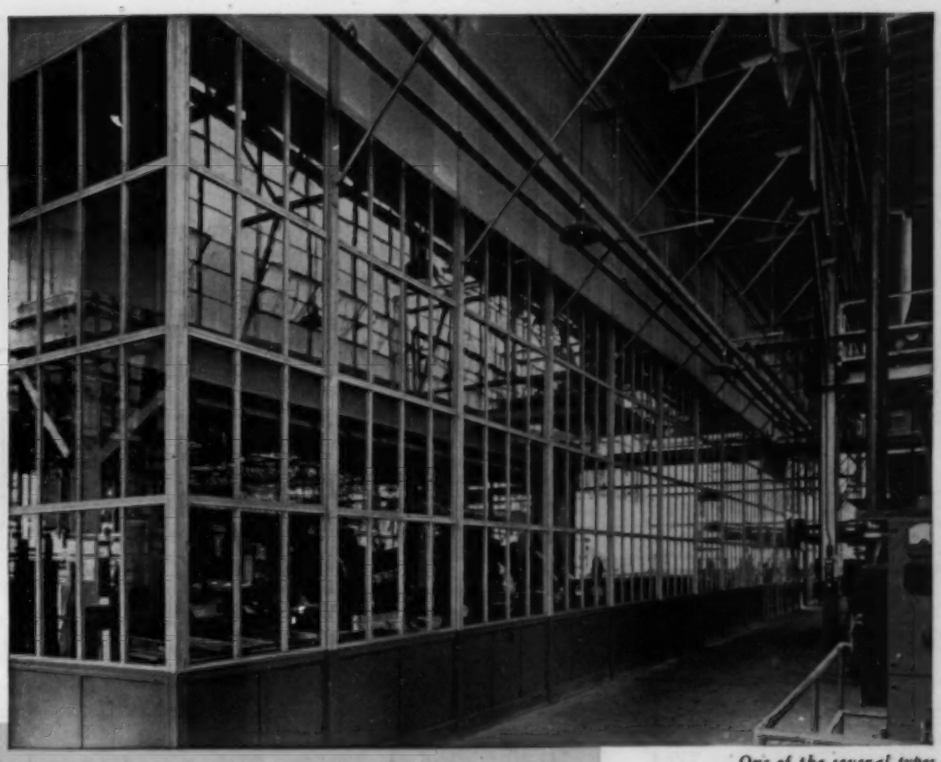

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CONSTRUCTION COST INDEXES

Labor and Materials

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Presented by Clyde Shute, manager, Statistical and Research Division, F. W. Dodge Corp., from data compiled by E. H. Boeckh & Assocs., Inc.

NEW YORK

Period	Residential Brick	Residential Frame	Apts., Hotels Office Bldgs. Brick and Concr.	Commercial and Factory Bldgs. Brick and Concr.	Commercial and Factory Bldgs. Brick and Steel
1925	121.5	122.8	111.4	113.3	110.3
1930	127.0	126.7	124.1	128.0	123.6
1935	93.8	91.3	104.7	108.5	105.5
1939	123.5	122.4	130.7	133.4	130.1
1940	126.3	125.1	132.2	135.1	131.4
1945	160.5	161.7	156.3	158.0	155.4
1946	181.8	182.4	177.2	179.0	174.8
1947	219.3	222.0	207.6	207.5	203.8
1948	250.1	251.6	239.4	242.2	235.6
1949	243.7	240.8	242.8	246.4	240.0
May 1950	250.8	248.9	245.4	247.7	244.3
June 1950	255.6	254.4	246.8	248.7	245.9
July 1950	261.3	261.0	251.1	252.6	250.0
	% increase over 1939				
July 1950	111.6	113.2	92.1	89.4	92.2

ATLANTA

Period	Residential Brick	Residential Frame	Apts., Hotels Office Bldgs. Brick and Concr.	Commercial and Factory Bldgs. Brick and Concr.	Commercial and Factory Bldgs. Brick and Steel
1925	86.4	85.0	88.6	92.5	83.4
1930	82.1	80.9	84.5	86.1	83.6
1935	72.3	67.9	84.0	87.1	85.1
1939	86.3	83.1	95.1	97.4	94.7
1940	91.0	89.0	96.9	98.5	97.5
1945	132.1	133.9	123.2	122.8	123.3
1946	148.1	149.2	136.8	136.4	135.1
1947	180.4	184.0	158.1	157.1	158.0
1948	199.2	202.5	178.8	178.8	178.8
1949	189.3	189.9	180.6	180.8	177.5
May 1950	190.9	192.9	181.0	179.9	180.7
June 1950	192.5	194.9	181.6	180.3	181.3
July 1950	195.4	198.2	183.8	181.2	182.4
	% increase over 1939				
July 1950	126.4	138.5	93.3	86.0	92.6

ST. LOUIS

1925	118.6	118.4	116.3	118.1	114.4
1930	108.9	108.3	112.4	115.3	111.3
1935	95.1	90.1	104.1	108.3	105.4
1939	110.2	107.0	118.7	119.8	119.0
1940	112.6	110.1	119.3	120.3	119.4
1945	152.8	152.3	146.2	148.5	145.6
1946	167.1	167.4	159.1	161.1	158.1
1947	202.4	203.8	183.9	184.2	184.0
1948	227.9	231.2	207.7	210.0	208.1
1949	221.4	220.7	212.8	215.7	213.6
May 1950	231.5	229.8	219.8	222.4	221.5
June 1950	233.8	231.0	222.4	226.6	222.5
July 1950	237.1	235.0	223.9	227.7	223.9
	% increase over 1939				
July 1950	115.2	119.6	88.6	90.1	88.2

SAN FRANCISCO

1925	91.0	86.5	99.5	102.1	98.0
1930	90.8	86.8	100.4	104.9	100.4
1935	89.5	84.5	96.4	103.7	99.7
1939	105.6	99.3	117.4	121.9	116.5
1940	106.4	101.2	116.3	120.1	115.5
1945	146.2	144.3	144.5	146.8	147.9
1946	159.7	157.5	157.9	159.3	160.0
1947	193.1	191.6	183.7	186.8	186.9
1948	218.9	216.6	208.3	214.7	211.1
1949	213.0	207.1	214.0	219.8	216.1
May 1950	224.8	220.4	220.1	223.1	220.8
June 1950	228.2	225.1	221.3	223.6	221.8
July 1950	232.6	229.7	224.0	225.6	224.1
	% increase over 1939				
July 1950	120.3	131.3	90.8	85.1	92.4

The index numbers shown are for combined material and labor costs. The indexes for each separate type of construction relate to the United States average for 1926–29 for that particular type — considered 100.

Cost comparisons, as percentage differences for any particular type of construction, are possible between localities, or periods of time within the same city, by dividing the difference between the two index numbers by one of them; i.e.:

index for city A = 110
index for city B = 95

(both indexes must be for the same type of construction).

Then: costs in A are approximately 16 per cent higher than in B.

$$\frac{110-95}{95} = 0.158$$

Conversely: costs in B are approximately 14 per cent lower than in A.

$$\frac{110-95}{110} = 0.136$$

Cost comparisons cannot be made between different types of construction because the index numbers for each type relate to a different U. S. average for 1926–29.

Material prices and wage rates used in the current indexes make no allowance for payments in excess of published list prices, thus indexes reflect minimum costs and not necessarily actual costs.

These index numbers will appear regularly on this page.

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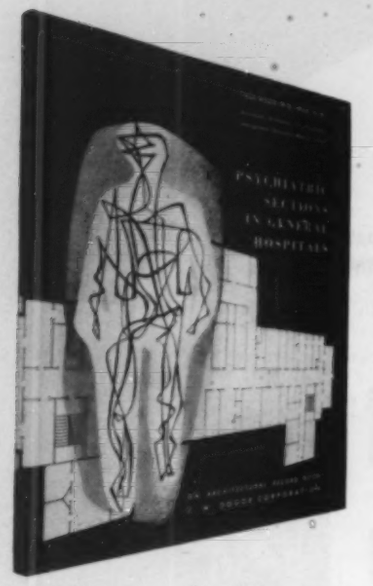
REQUIRED READING



Jacket design by Peter Piening

PSYCHIATRIC PLANNING

Psychiatric Sections in General Hospitals. By Paul Haun, M.D., Med. Sc.D. F. W. Dodge Corp. (119 West 40th St., New York 18, N. Y.) 1950. 80 pp. illus. 7½ by 10 in. $4.00.

REVIEWED BY GERALD C. HUDSON
Bail, Horton & Associates,
Architects & Engineers

Since last month when our Fort Myers office received a copy of this new reference book, *Psychiatric Sections in General Hospitals*, by Dr. Paul Haun, the members of our architectural design section have perused it carefully and discussed it frequently. The most appropriate criticism was expressed by one designer who had been engaged on hospital design almost continually through the past decade when he said, "Now he tells us! Why didn't Dr. Haun publish this thing ten years ago and save me a lot of headaches?"

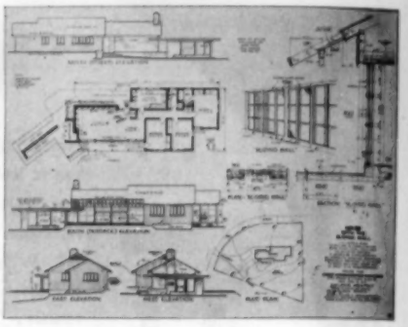
This little reference book with its numerous diagrammatic floor plans accompanied by scores of comments entitled "Desirable Aspects" and "Undesirable Aspects" contains more meat for a hospital designer and especially one who is faced with the inclusion of a psychiatric section in a general hospital than any such technical book which we have observed in recent years.

Thousands of reference books published for the benefit of architectural designers present dogmatic theories concerning this or that type of layout which, if followed, defy gravity, require an ample supply of "sky hooks" and create demand for psychiatric treatment among mechanical designers. In sharp contrast, Dr. Haun presents no "ideal solutions." Realizing that any "tight" layout termed "ideal" for one particular hospital would probably be inappropriate for any other hospitals in other localities and intended to satisfy other local conditions, his book teaches in clear primer style by calling attention to the good and bad features of a wide variety of plans. Through this technique he thoroughly informs the designer concerning objectives and pitfalls and then accords the designer complete freedom to devise a genuinely ideal layout for the particular project on which he is engaged.

After attaining high professional recognition as a psychiatrist, Dr. Haun was engaged in a consulting capacity by the U.S. Veterans Administration to advise in the design of neuro-psychiatric hospitals and psychiatric sections in general hospitals of the V.A.'s huge nation-wide hospital expansion program, involving scores of projects ranging from 200 to 1300 beds. Design of the majority of these hospitals was entrusted to sixty or more of our nation's leading firms of architects and engineers, and Dr. Haun worked almost daily with their designers through four years.

He acquired a drafting board, T-square, triangles and scale; rolled up his sleeves and then when experienced architectural, structural or mechanical designers insisted that this or that feature of a suggested layout could not be constructed without extravagant cost, he either devised a practical solution or altered the suggestion sufficiently to permit economical construction; and we'll tell you a secret — he even acquired a keen appreciation of modern functional design from the viewpoint of artistic composition!

With the rapidly growing conviction that neuro-psychiatric sections of appropriate size are essential to the proper functioning of even the smaller general hospitals, we believe that this conveniently composed reference book will soon be considered indispensable to the drafting room library of any firm indulging in hospital design.



Typical plan sheet, 50 Best Homes

SKETCH PLANS

50 Best Homes. By Joseph B. Mason. Good Housekeeping Magazine (959 Eighth Avenue, New York 19, N. Y.) 1950. 18 by 23¾ in. 100 pp. illus. $5.00.

In this volume, Joseph Mason, Director of *Good Housekeeping's* Building Forum, presents 50 designs of houses that have appeared in that magazine. This is no ordinary "plan book," and *Good Housekeeping* is not in the business of selling plans. Substantially all of the projects shown are designed by architects and have been prepared especially for the magazine by the architects involved.

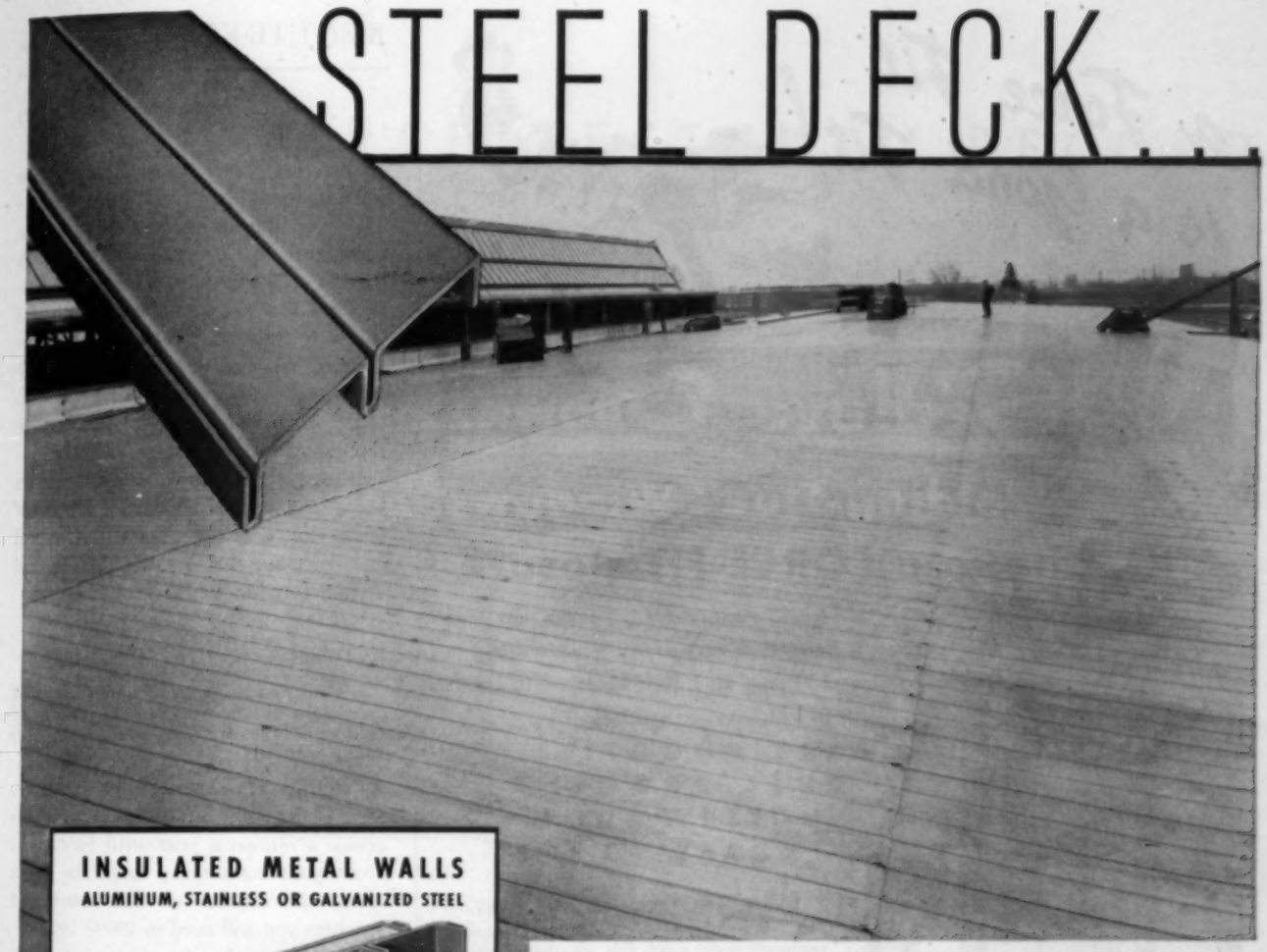
The character of the information shown will be evident from the accompanying illustration. The design sheet for each house contains a statement similar to the following, which is now the standard.

"This sketch-plan is a preliminary guide for home study or discussion with your architect or building adviser. It will be helpful in obtaining cost estimates. It is not a building document. All data should be verified. If construction is planned, detailed working drawings should be prepared to conform with local building codes and meet the special requirements of your individual site. For information about working drawings, write directly to the architects."

Although a few of the 50 houses are distinctly stylistic in character, these by no means set the tone of the book. None of the houses is done in an extreme modern manner, but designs similar in character to the one prepared by architect Edward D. Stone should tend to advance acceptance of modern residential

(Continued on page 32)

STEEL DECK...



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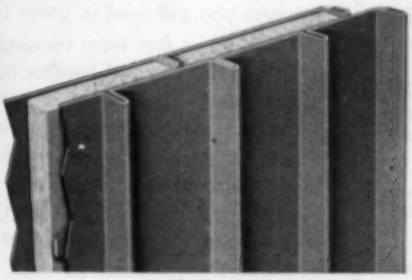
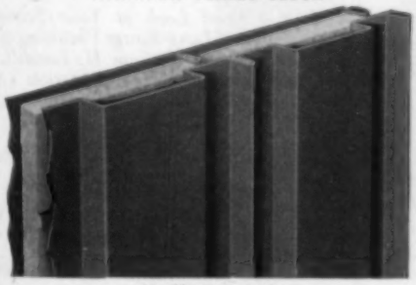


Wall No. 066
RIBBED EXTERIOR PLATES
INTERIOR PLATES FLUSH



Wall No. 363
FLUTED EXTERIOR PLATES
INTERIOR PLATES FLUSH

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REQUIRED READING

(*Continued from page 30*)

architecture. Such design exhibits the warmth and intimacy that has undoubtedly been the major factor in popular acceptance of Colonial architecture. A perusal of the 50 houses leaves the impression that the architects were urged to use restraint in creating the modern designs, whereas those preparing the traditional ones were encouraged to do some streamlining rather than create replicas of historic houses. Whether intentional or not, the book represents an evolutionary approach to the problem of promoting a broader understanding of and demand for modern residential architecture among the general public.

SCHOOLS, MORE SCHOOLS

The Growing Challenge. Pamphlet prepared by the Committee on Education. Chamber of Commerce of the U. S. (Washington, D. C.) 1950. 4 by 6½ in. 32 pp. illus.

"Record enrollments are upon us. . . . Elementary enrollments will increase a *million* a year until 1956. . . . Does your community have the facts about the number of classrooms and teachers you will need in 1950? 1955?"

These are a few terse opening statements of the recent Chamber of Commerce study. In light of higher living standards and constant necessity for education the Committee on Education has 1) summarized present-day school conditions, 2) briefly suggested the economic picture over a period of years, and 3) propagandized for state rather than federal aid in handling the somewhat enormous problems at bay.

Take a Good Look at Your Schools. An Approach to Long-Range Planning of School Buildings. By William H. Caudill, Texas Engineering Experiment Station (A.&M. College of Texas, College Station, Tex.) 1950. 8½ by 8 in. 43 pp. illus.

Mr. Caudill, A.I.A., advocates long-range planning and approaches it via Education, Architecture and Finance. *Education* considerations are: "What will be the community's educational policy? What kind of teaching program will best serve the community? What curricular changes will be needed?" Involved in the problems of *Architecture* are these: "How many children will be served? What facilities will be needed? Where will new schools be located? To what extent can the old building be used?" Concerning the business of *Finance*, one query stands alone: "How much money can be raised?"

ARCHITECTURAL RECORD

Ben Pong

ARCHITECTURE IN HAWAII

This panorama of contemporary design was prepared in collaboration with the Hawaii Chapter of The American Institute of Architects. Because of the wealth of material assembled by the Chapter, and the high quality of the work, it is necessary to present the study in two parts. Part II will appear in November.

TWO BUILDING TYPES STUDIES

Hospitals and schools currently represent one-third of all non-residential building in the country, according to analysis of F. W. Dodge Reports. Because meeting the very great demand for additional school and hospital facilities contributes directly to the national welfare and morale, it is in the public interest to sustain building in these categories at highest levels compatible with defense requirements.

Roger Sturtevant

MENTAL HOSPITALS

Forty-two per cent of all existing hospital beds in this country are for mental patients (not counting beds in institutions for the feeble-minded). A recent study made by the U. S. Public Health Service points out that an increase of about 310,000 (over the 382,000 acceptable existing beds) is needed if the States and Territories are to provide adequately for mental patients.

SCHOOLS

The Fifth Annual Report of the National Education Association states that in order to meet the estimated demand over the next ten years, a billion-dollar annual school construction program must be maintained until 1960. The rate of school construction is just now reaching this figure.

Photo courtesy Matson Lines

Frame house imported by missionaries in 1820 and coral block house built in 1831

The Old Palace, no longer standing, was built in 1846 for King Kamehameha III

Iolani Palace, built between 1879 and 1881, now houses the Territorial offices

Valdemar Knudsen residence (Albert Ely Ives, Architect) has Oriental features

Raymond M. Sato Photos

ARCHITECTURE IN HAWAII

PART I

INTRODUCTION BY ROBERT P. GRIFFING, JR.
Director, Honolulu Academy of Arts

THE thoughts of the traveler approaching the shores of Hawaii for the first time are on anything and everything but architecture. The finest building in the world would be obscured by the physical grandeur of the Islands. Here nature has achieved one of her most nobly gracious effects, and the works of man must inevitably suffer by comparison.

Architecturally speaking, however, the first reaction of the visitor to Hawaii is one of disillusion. Those buildings which he first sees breathe little or nothing of the special quality of the tropics. They would, in fact, be comfortably at home in any medium-sized American city.

There are two main reasons for this. In the first place, the architectural appearance of Hawaii was early determined by men who came from other lands bringing their own traditional concepts with them. The first missionaries who arrived in the brig *Thaddeus* in 1820 brought with them a prefabricated New England style house which remains standing to this day. In the second place, Honolulu became the city it is throughout the course of the 19th and early 20th centuries, and all the confused vagaries of design of that era were inevitably echoed in the Islands. Honolulu, like any American city, is a hodgepodge of classical revival, Victorian Gothic, pseudo-Romanesque, Beaux-Arts ecclecticism and every other designing whim to which the face of the United States in general has been subjected since 1820.

Behind this apparent averageness, however, a second look makes the visitor aware that he is in the tropics and that an element of the picturesqueness does, after all, exist. The former is accomplished by the "Hawaiian style" house with its all-pervasive "lanai," the latter by the Oriental influence.

The Hawaiian style is the result of a truly indigenous stylistic evolution which has taken place as a result of special conditions of climate and an attitude towards daily living. When the missionaries came they found the native Hawaiian living mainly out of doors, but using for his more intimate requirements a simple, one-room rectangular affair whose walls and steeply thatched roof were of grass and whose only sizable opening (in the long side of the rectangle) served as an entrance. Obviously such a house could not meet the more complex and rigid requirements of the white settlers, nor could those hardy souls continue indefinitely to have their houses shipped, pre-packaged, around Cape Horn. Therefore, they proceeded to adapt what they found in existence, and with the addition of windows, a broad verandah which is the progenitor of the present day lanai, and side wings for kitchen and sleeping quarters, the Hawaiian style was born.

Properly speaking, the lanai is an out-of-doors living area with a minimum of enclosing wall. It offers the advantage of protection from wind and rain without imposing a feeling of confinement — an immensely important consideration in an environment in which nature has been so generously beneficient. Small wonder that it has become the central feature of the typical Hawaiian house. In fact, it is not unusual to find the principal living rooms of a contemporary house not only unenclosed but even at times unenclosable.

The Hawaiian style has even found its application in more monumental architecture, the best example of which is Bertram Goodhue's design for the Honolulu Academy of Arts, certainly one of the most ingratiatingly informal museums in the world, ideally suited to the climate and completely devoid of the curse of obvious monumentalization which is the bugaboo of the more typical museum structure in America.

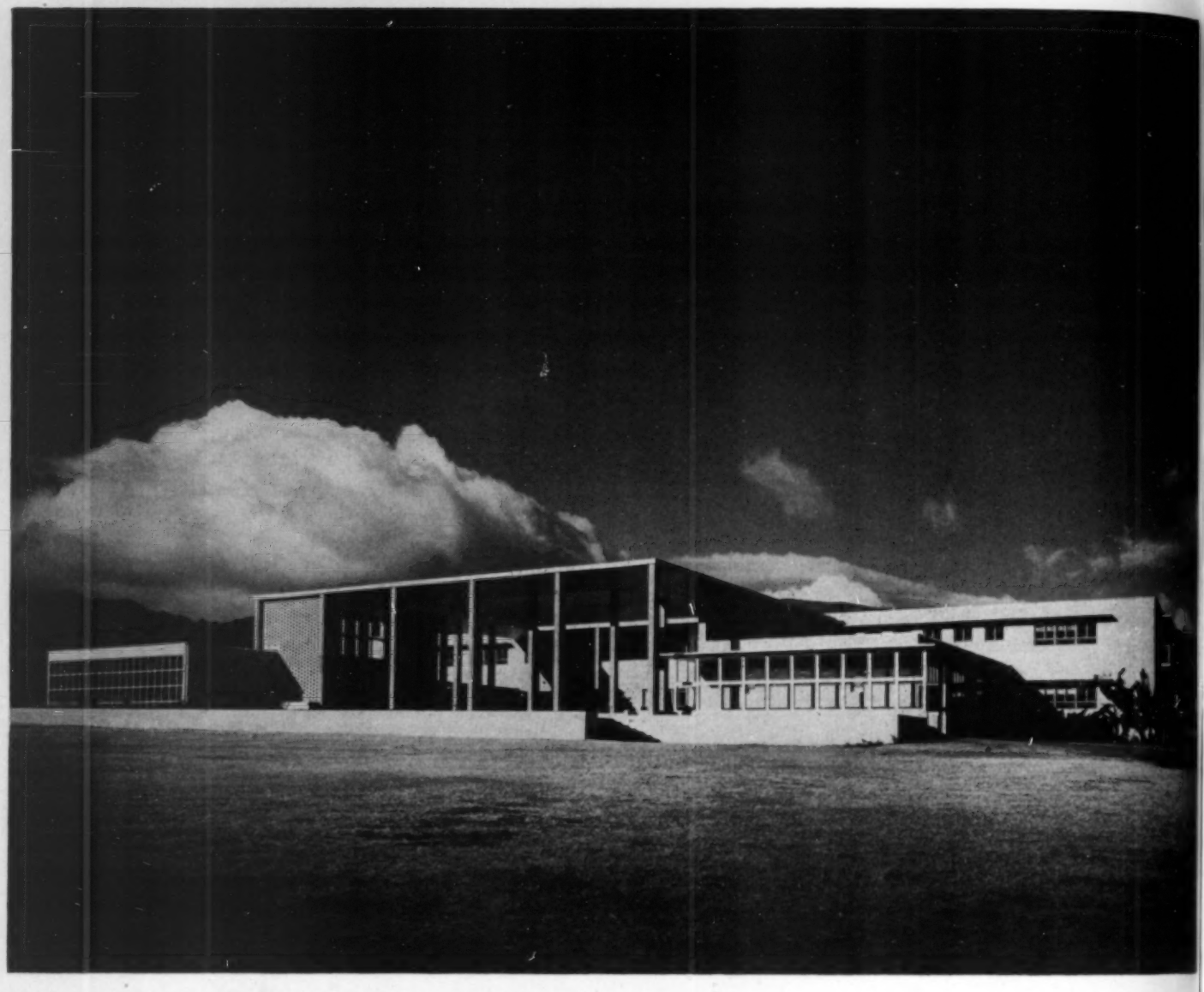
The Oriental influence on the architecture of Hawaii, on the other hand, developed more in the manner of a superimposition of Oriental decorative motives or the inclusion of Oriental structural features within a predominantly un-Oriental scheme. To be sure, there do exist entire, more or less completely faithful Chinese and Japanese structures throughout the Territory, but they are the exception whereas the house or public building incorporating Chinese-style posts as roofs supports, decoratively grilled windows, sliding doors of the Japanese "shoji" type to separate rooms, up-turned roof corners, and dozens of other importations from China and Japan are taken for granted by the resident.

Obviously, the effect of the Oriental influence can be, and often is, simply bizarre. It can also be extremely successful, and certainly the combination of Oriental and Occidental influences in Hawaiian architecture is a natural concomitant of the commingling of Eastern and Western peoples in Hawaii. Hawaii truly exists between two worlds, and her people share the cultural and philosophical traditions of each to an ever-increasing degree. What at first may seem picturesque because it is novel soon comes to be recognized as the result of an irresistibly logical evolution. There is little doubt that Hawaii's contribution to the history of 20th century architecture will be measured in terms of the unselfconscious employment of the heritage of both East and West within an overall plan dictated by the climatic conditions of the region. This already has happened with a considerable degree of success, especially in domestic architecture in which elements of the Oriental have begun to lose their specifically Chinese or Japanese character to contribute to the stylistic integrity of the whole. One cannot expect such an evolution to happen overnight; the important thing is that it is happening at all.

The architect in Hawaii faces special problems, not the least of which is that his raw materials must cross an ocean. Building costs are therefore generally high, although this is offset somewhat by the fact that, in some types of building, actual construction may be considerably lighter than in more rigorous climates. It is also true that where stock measurements are in order, these have been predetermined for him by the conditions of mainland requirements, foreign to those of Hawaii. But he also has the advantage of participation in a unique cosmopolitanism, the influence of whose impact he cannot altogether escape. In these Islands, perhaps more demonstrably than in any other area of the United States, there exists the atmosphere for the development of an architecture of symbolism in its fullest sense, without which no style can have genuine significance.

Grass houses in Nuuanu Valley in the 1850's; drawing by George H. Burgess

ADMINISTRATION BUILDING,



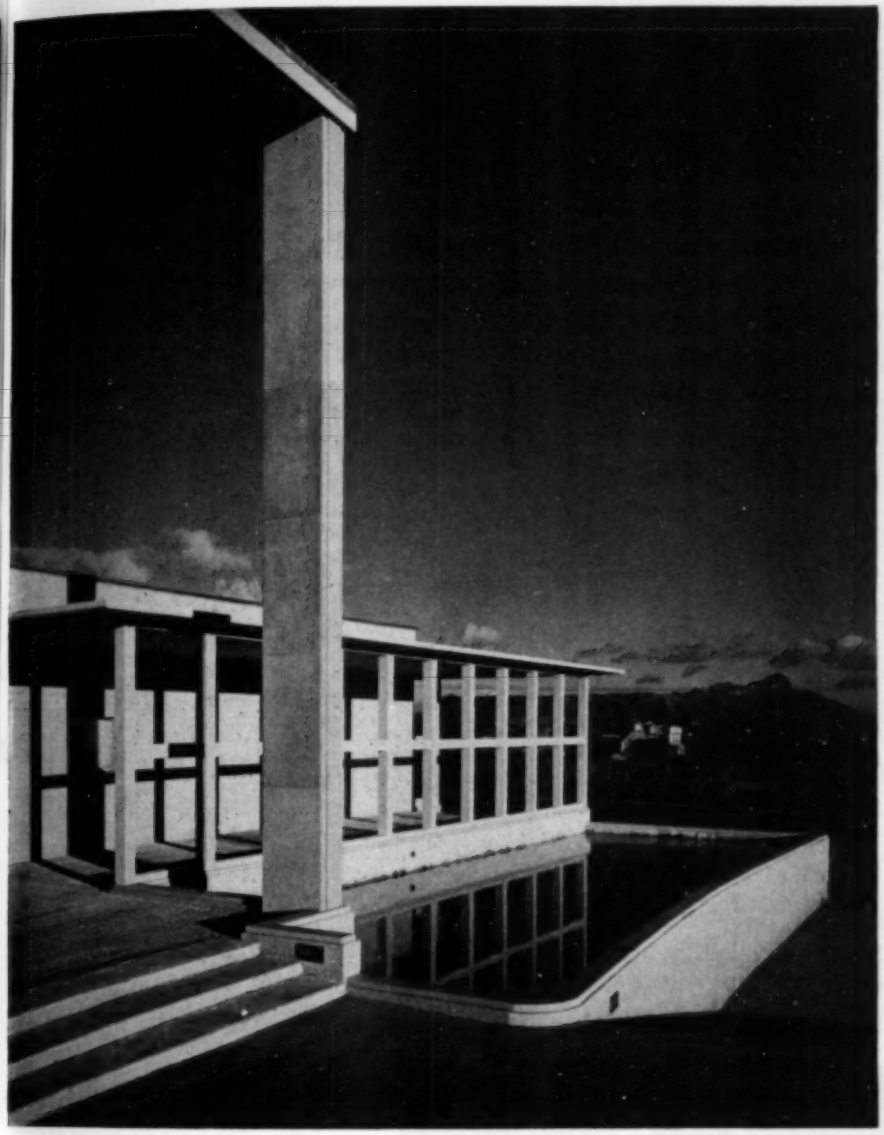
Fisk, Johnson, Ossipoff & Preis, Architects

(Vladimir Ossipoff, Coordinator)

ARCHITECTURE in the Hawaiian Islands very obviously has been affected not only by climate but by geography and the limitation of materials as well. The buildings shown on these pages, and to be shown next month in Part II of this study, have a number of features in common which may be attributable to those influences. First of all there is an open airiness made possible by — almost demanded by — the climate. It extends to every type of building from residential to commercial; it shows up in what Mr. Griffing has called "the all-pervasive lanai," in the frequent use of louvers and grilles, in open corridors, in balconies. There is a certain boldness of design suggesting the dramatic panorama of mountain and sea. There is a frequent hint of lushness blending with the semi-tropical vegetation. There is often a windowless wall to shut out the glare of the sea. And there is always the up-to-dateness characteristic of any great tourist center.

These various features are particularly marked in the Administration Building at the University of Hawaii. This building is planned around a central lanai which serves as the corridor connecting the ground-floor wings. Cantilevered stairs lead from the lanai to the second floor. Horizontal sun shades, generously-proportioned sun baffles, and a perforated screen wall are used as aids to temperature control. Columns and a reflecting pool add the dramatic touch, and the varied roof line blends with the mountains in the background.

UNIVERSITY OF HAWAII



R. Wenkam Photos

Foundation—Concrete

Framing—Reinforced concrete and open web steel joists

Exterior walls—Cement block

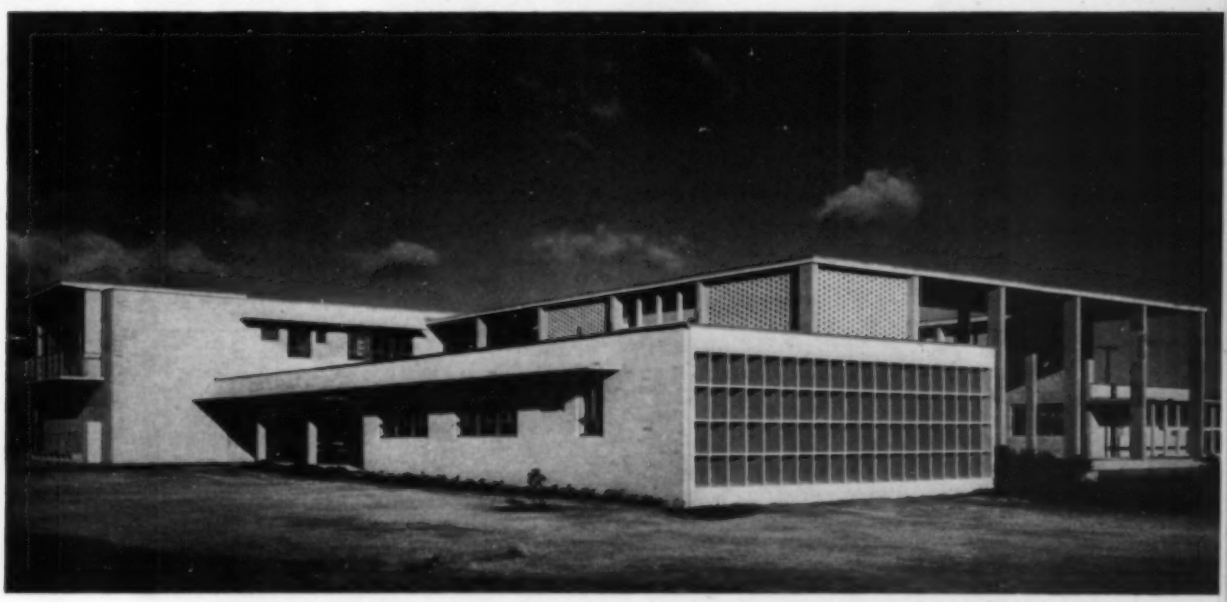
Interior walls—Plaster

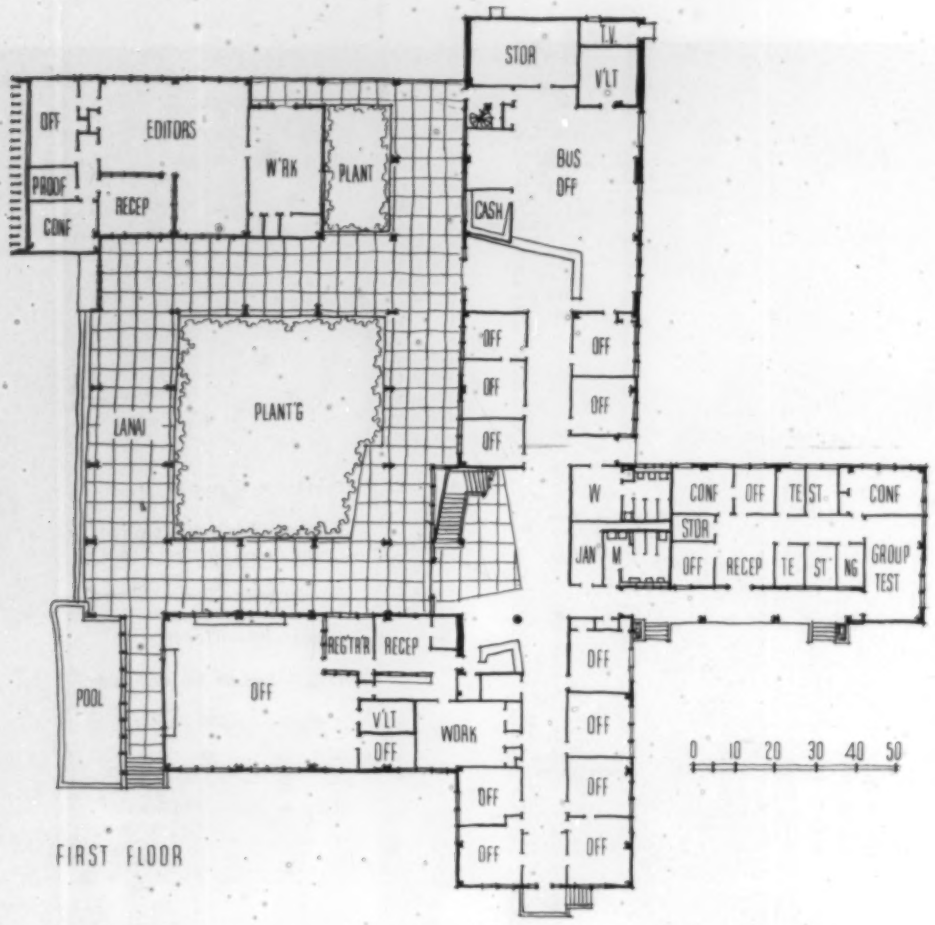
Floors—Asphalt tile and cork

Ceilings—Acoustic plaster

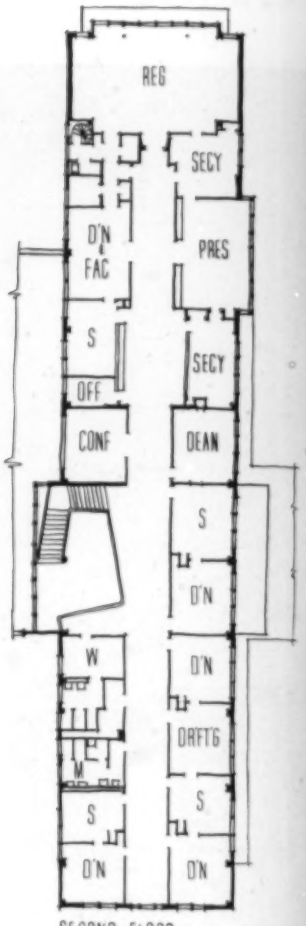
Sash—Steel

Entrance doors—Aluminum



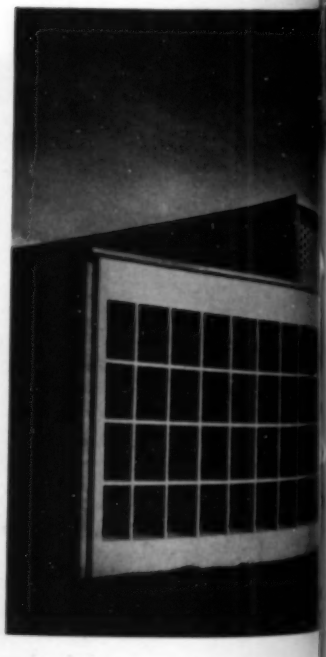


FIRST FLOOR

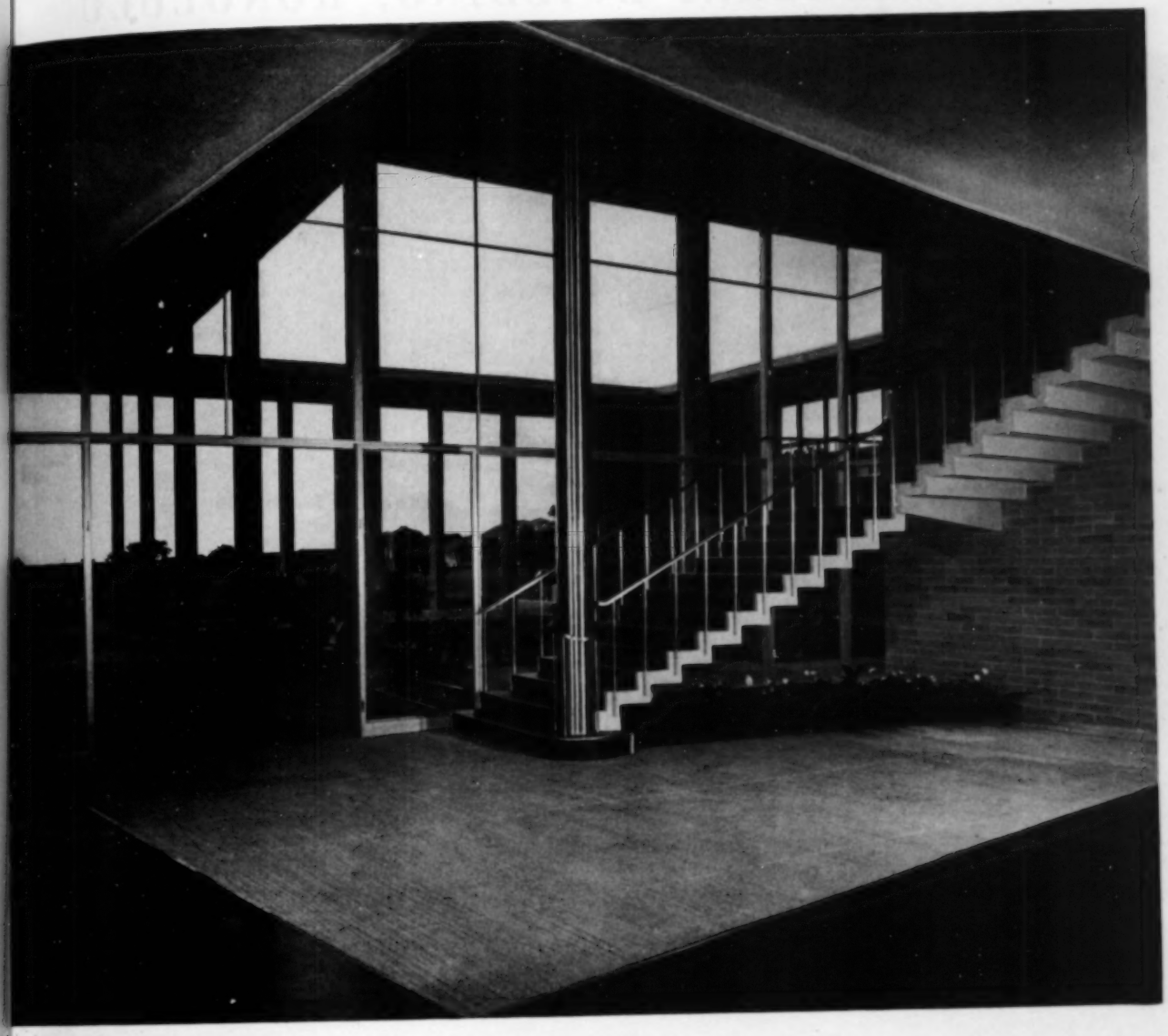


SECOND FLOOR

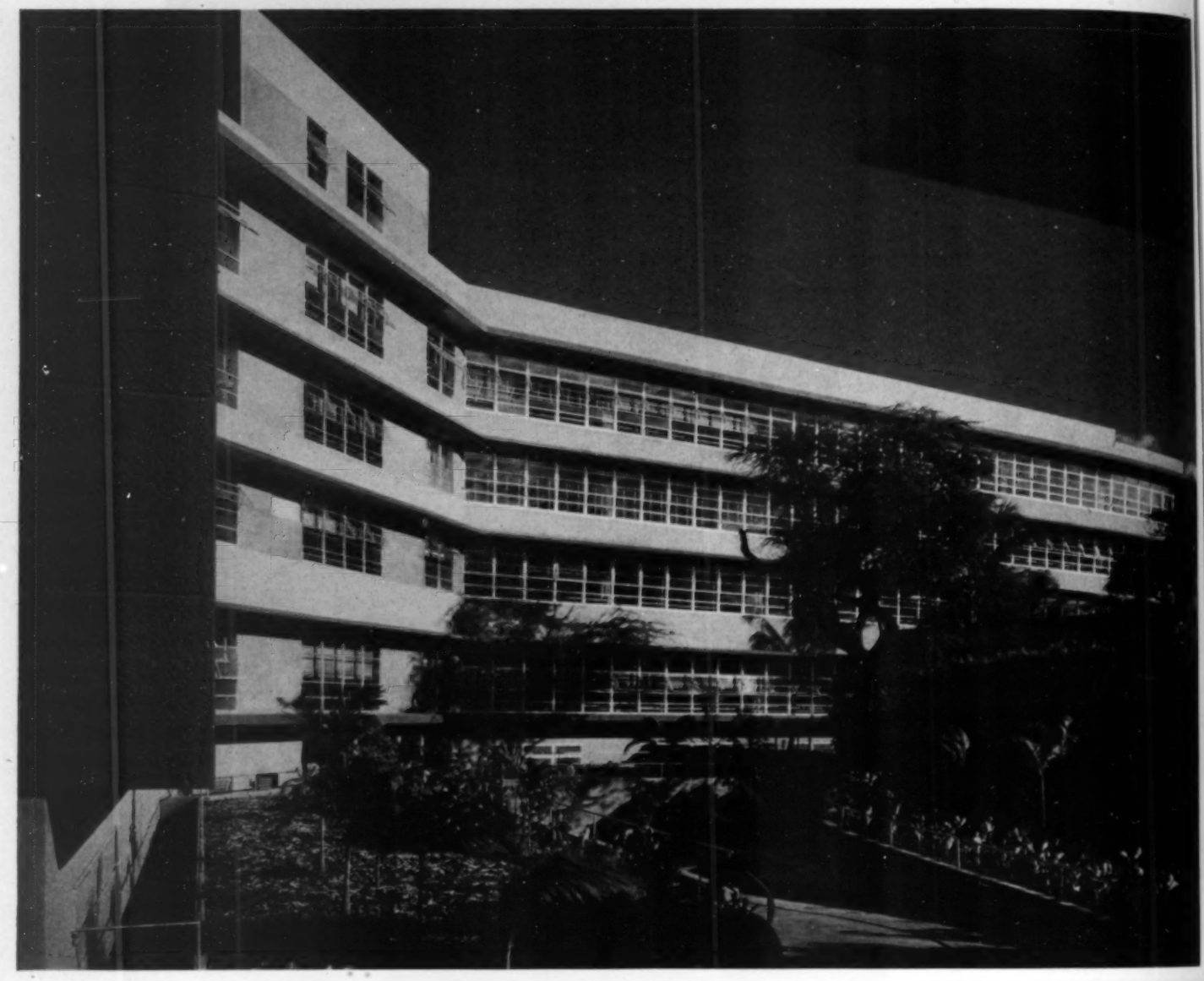
The lanai itself is the main lobby of the Administration Building, with the stairs to the second floor leading almost directly from it. The cantilevered stairs and the balcony-like treatment of the second-floor landing emphasize the building's general openness. Mural under the stairs is by Jean Charlot



R. Wenkham Photos



QUEEN LILIUOKALANI BUILDING, HONOLULU



Hart Wood and Edwin A. Weed

Associated Architects

C. J. Erickson, Structural Engineer

THE Queen Liliuokalani Building is the home of the Territorial Welfare Department. Because of what it is, it has no lanai, no inviting patio, no balconies. But even so, despite its mass, it has very little of the kind of monumentalism usually expected of government structures. Strip windows and sun shades accent its horizontal lines, and almost-windowless end walls give esthetic relief from the ribbons of glass on the main facades. Its unusual shape visually minimizes its size, while giving it street frontage on three sides. Landscaping at the rear partially atones for the lack of lanais by adding a pleasantly informal note in keeping with the surroundings.

The building provides, in addition to ample office space, various other facilities: print shop, library, assembly hall, archives, and sections for vocational guidance and rehabilitation, dental health and hygiene. It offers two interesting comparisons with contemporary office buildings in the continental United States. The first is one of similarity: the columns of the outer walls are set back a little, much as they are in current work here, to simplify window detailing (see plan, page 114). The second is one of difference: it is surprising to find a four-story building equipped with full elevator service. Many of the people who use the building, of course, are physically unfit, but part of the reason for the elevators may be that government ownership gives it a natural importance in the Islands.

Foundation—Concrete

Framing—Reinforced Concrete.

Exterior walls—Concrete; end walls exposed aggregate concrete

Interior walls—Plaster

Floors—Concrete, covered with rubber tile in corridors and asphalt tile in rooms

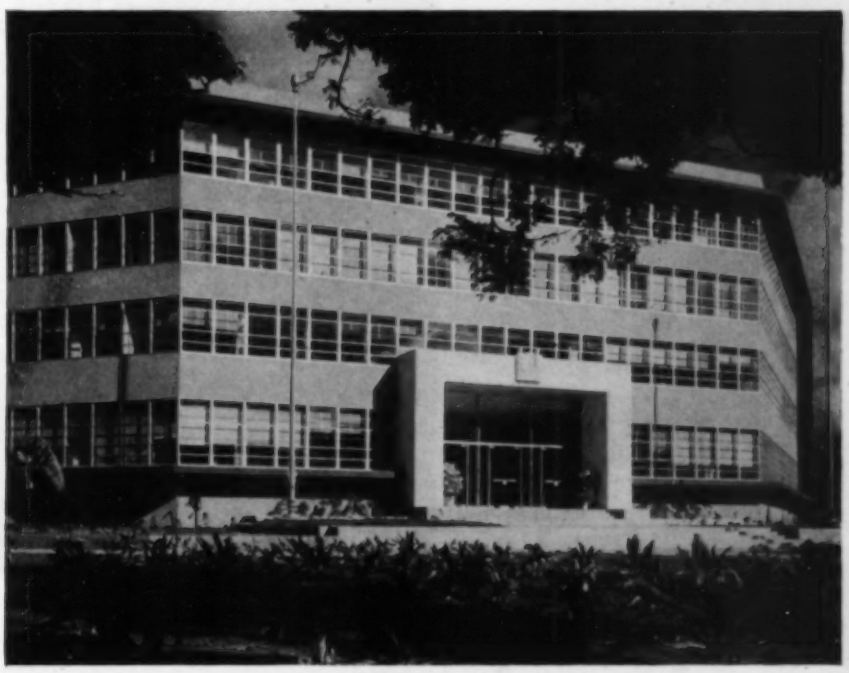
Ceilings—Plaster and acoustic tile

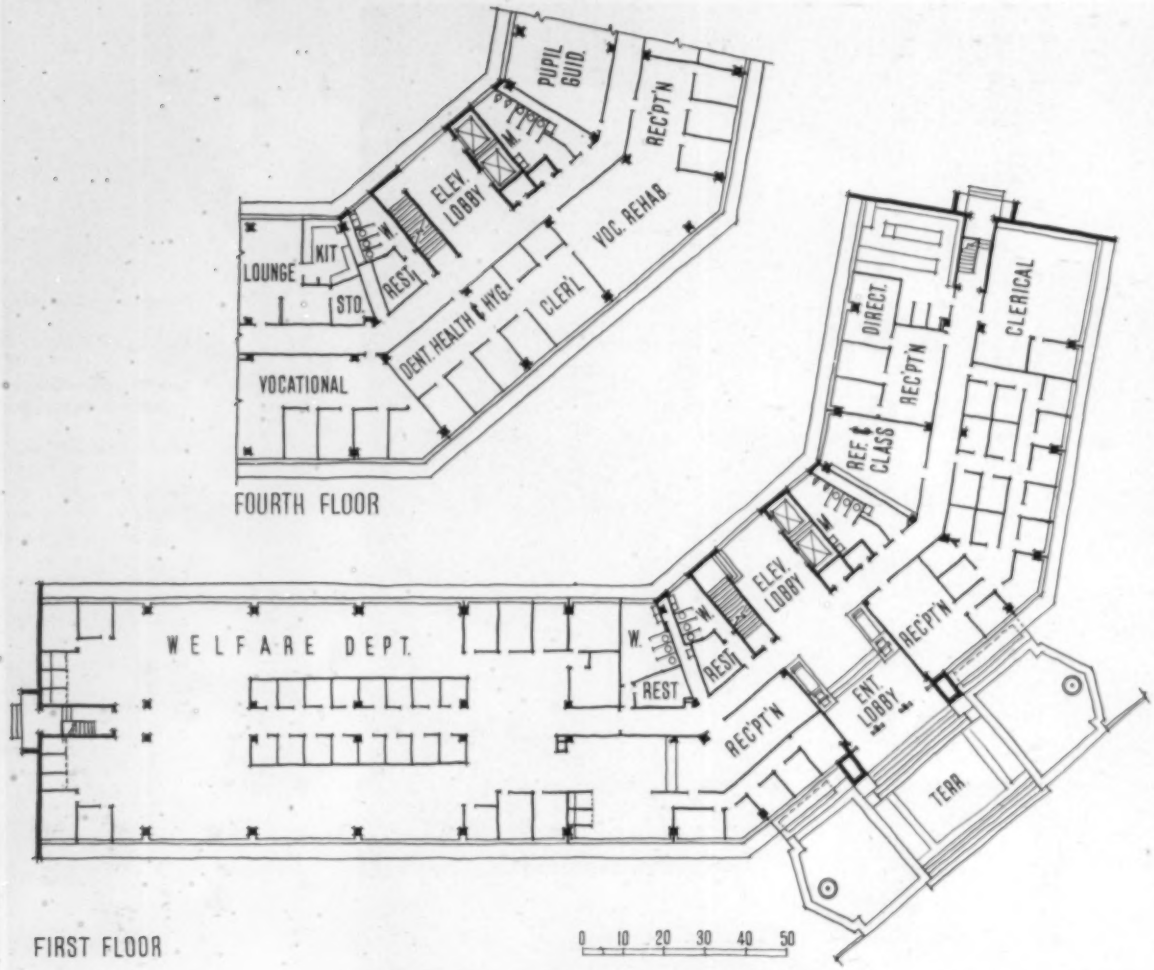
Sash—Steel, projected

Interior Doors—Koa veneer

Woodwork—Bleached Koa

R. Wenkam Photos





R. Wenkam Photos

The three upper floors follow the same general layout as the first, except that they have a corridor leading from elevator through the center of each wing. Offices occupy most of the first three floors; space allotted to vocational guidance and rehabilitation takes up most of fourth. Central location of elevators and the angling of the wings does much to eliminate the feeling of endless corridors common to many such buildings, especially for those going to the upper floors

LEAHI HOSPITAL, HONOLULU

Camera Hawaii Photos

Semi-Permanent Ward Buildings
and Occupational Therapy-Kitchen Unit

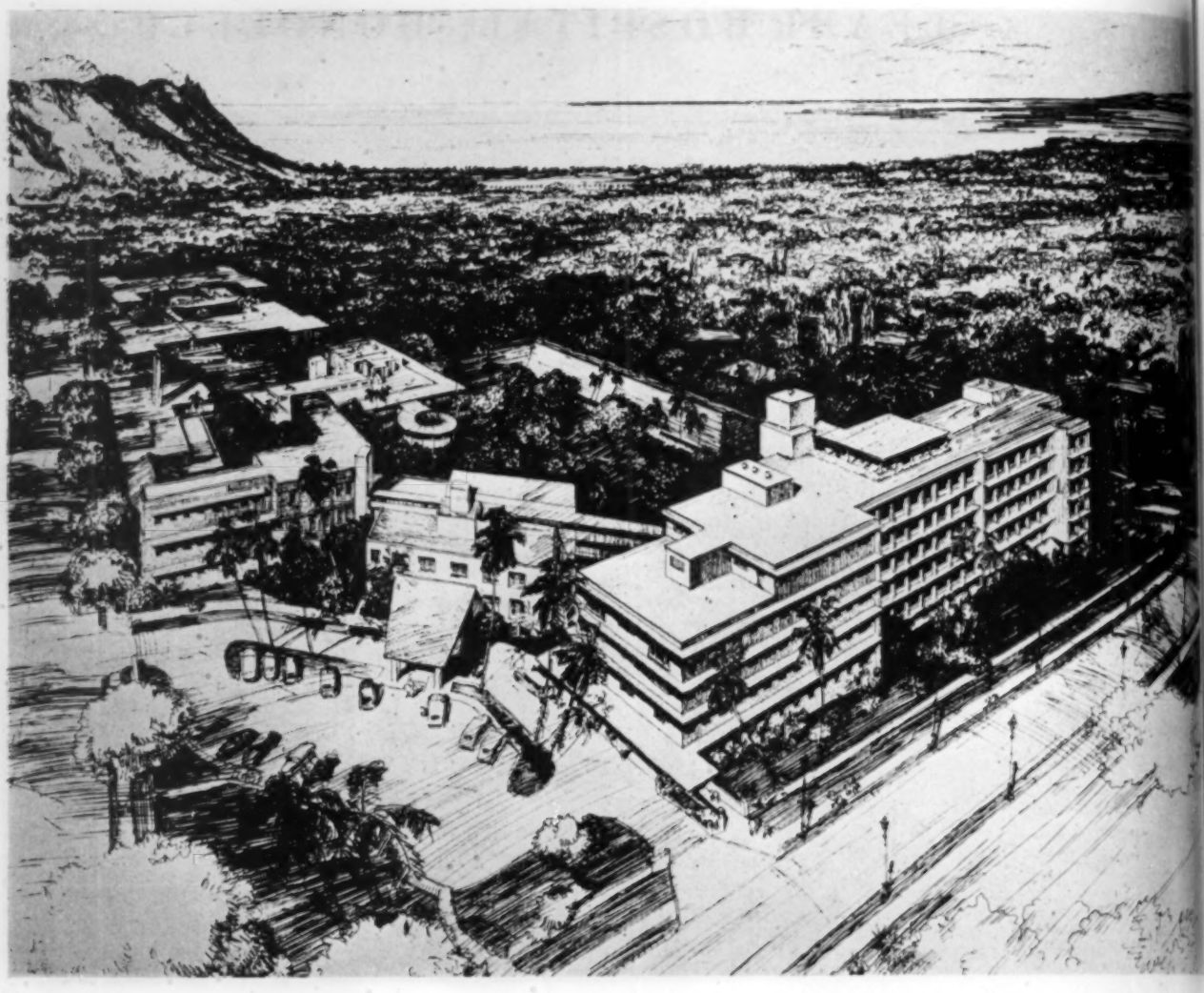
Merrill, Simms and Roehrig, Architects

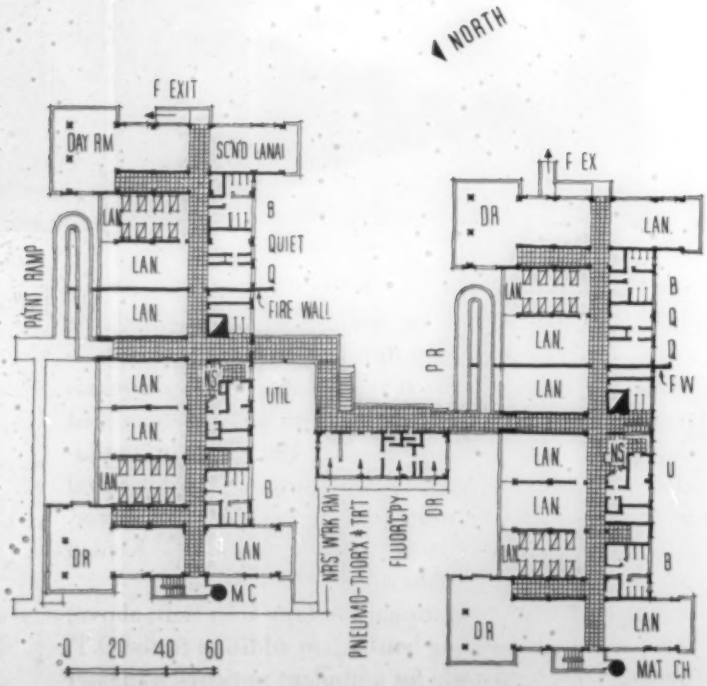
LEAHI HOSPITAL in Honolulu is the largest of the Territory's four tuberculosis hospitals. Established in 1901, it is now being completely redeveloped into a 750-bed group with virtually all the facilities of a general hospital, maternity excepted.

The first units erected under the redevelopment plan were the Semi-Permanent Ward Buildings (right in photo above) for 240 ambulant patients. These units are, surprisingly, of semi-fireproof wood construction, with concrete firewalls bisecting each and used unadorned as elements in the exterior composition. Their construction, and their location away from the main group of buildings, is explained by the Territory's expectation of a marked decrease in tuberculosis within the next few years. The wood units would then be evacuated and used for a different purpose.

The wards are designed to give the patients a maximum of fresh air. Between wards and lanais are modified triple-hung wood louvers allowing 100 per cent ventilation, the width and height of the ward, when raised. End walls are toward the west, where ocean glare is a factor. All patient rooms face north and east toward the Koolau Mountains and the trade winds.

The Kitchen-Occupational Therapy Unit (left, above) is a permanent building housing, in addition to the O.T. department, a cafeteria for ambulant patients, a theater and assembly hall, canteen and library. Ramps are used extensively in both buildings.

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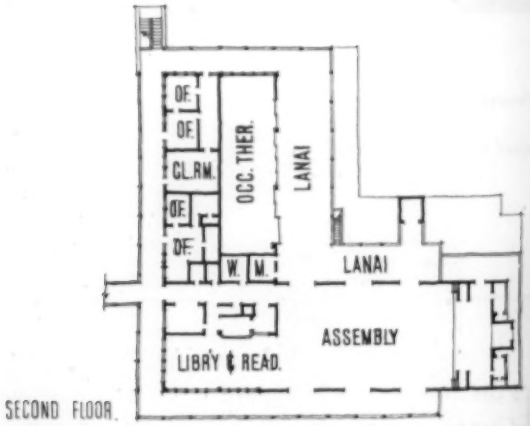
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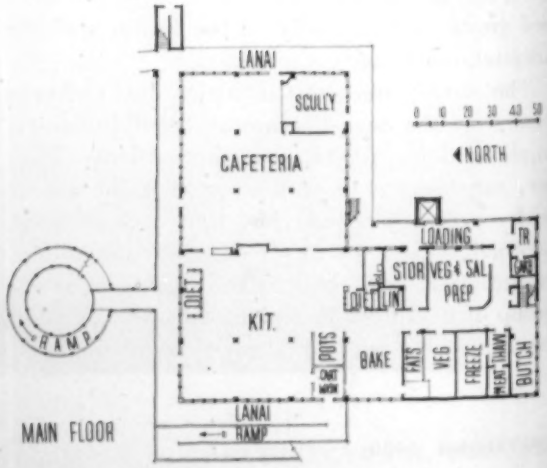
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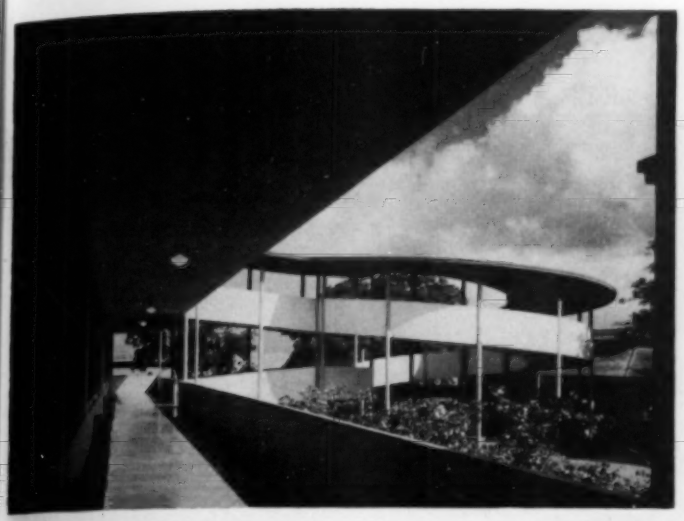


R. Wenkam Photos

WARD BUILDINGS

Foundation—Concrete

Framing—Slow-burning, heavy timber

Exterior walls—Redwood siding

Interior walls—Plywood and flat asbestos board

Floors—Asphalt tile

Sash—Wood

O.T. AND KITCHEN UNIT

Foundation—Concrete

Framing—Concrete

Exterior walls—Portland cement paint on stripped concrete

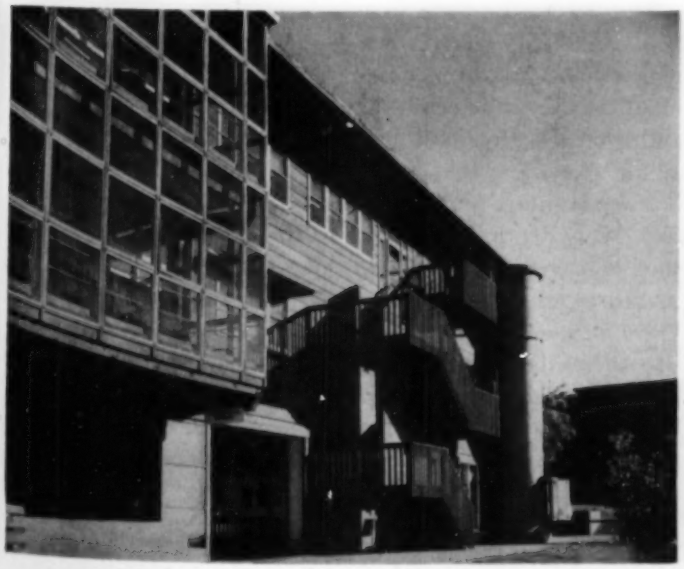
Interior walls—Same

Interior partitions—Lath and plaster or concrete block, painted

Floors—Concrete, asphalt tile, linoleum

Ceilings—Plaster, or concrete

Rendering opposite shows hospital as it will look when completed: Semi-Permanent Ward Buildings, left background; O.T. and Kitchen Unit, left of center (with Helix). Clinical and Nursing Wing, now under construction (foreground) is also shown in photo at right. Plans opposite show fire walls bisecting the ward units and the unusual placement of assembly-theater on second floor of O.T. unit



KENROCK BUILDING, HONOLULU

Cyril W. Lemmon, Architect
Douglas Freeth, Associate
Lo & Katavolos, Engineers
Makiki Nursery, Landscape Architects

R. Wenkam, Photos

THE unusual plan of this Honolulu office building is wholly attributable to one of Hawaii's major influences: the owners specified that it must be in keeping with the climate, and must have exterior corridors (balconies) affording direct access from the parking area to all of the offices.

The site is on a wide, main arterial highway, Kapiolani Boulevard, which is developing rapidly as a shopping center. The logical thing to do was to place the building across the entire 125-ft front of the property, and even the Honolulu architects were tempted, they admit, to do just that. Instead they placed it to much better advantage along one edge of the lot, running the full 200-ft depth from street to rear boundary. They thus achieved a large parking area, easily visible to motorists approaching from either direction, and provided for possible future expansion by leaving the opposite side of the site clear for a duplicate in reverse of the present building. The architects comment that the building (where Mr. Lemmon has his own office, reception room of which is shown at left) was quickly rented and has remained fully occupied, tending "to prove that visible parking is an asset to rental space."

Foundation—Concrete piles

Framing—Reinforced concrete

Exterior walls—Structural tile

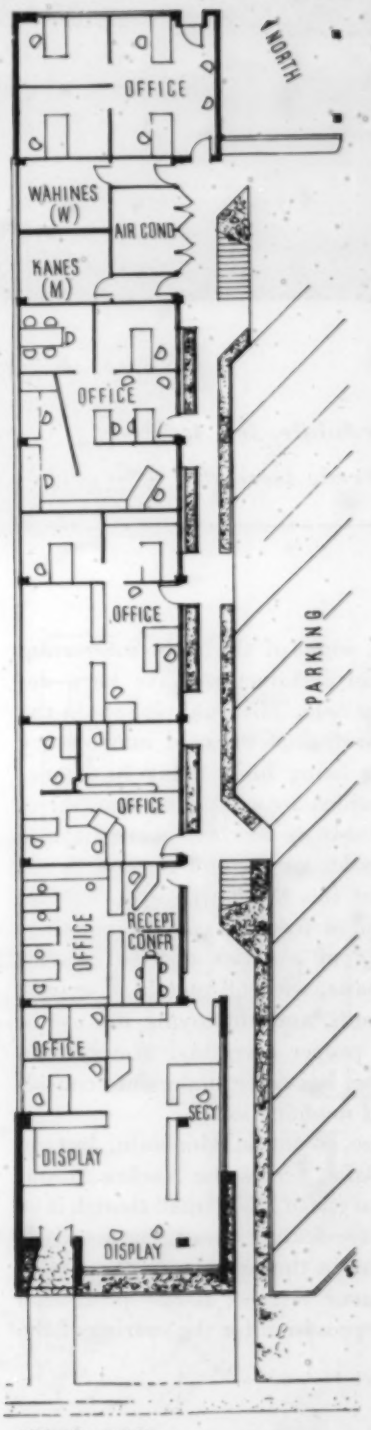
Interior walls—Plaster

Floors—Asphalt tile

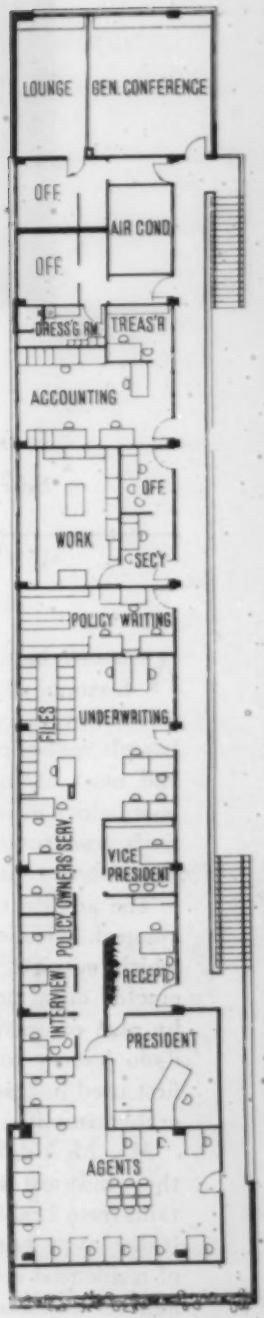
Ceilings—Acoustic plaster

Sash—Steel

Store fronts—Aluminum



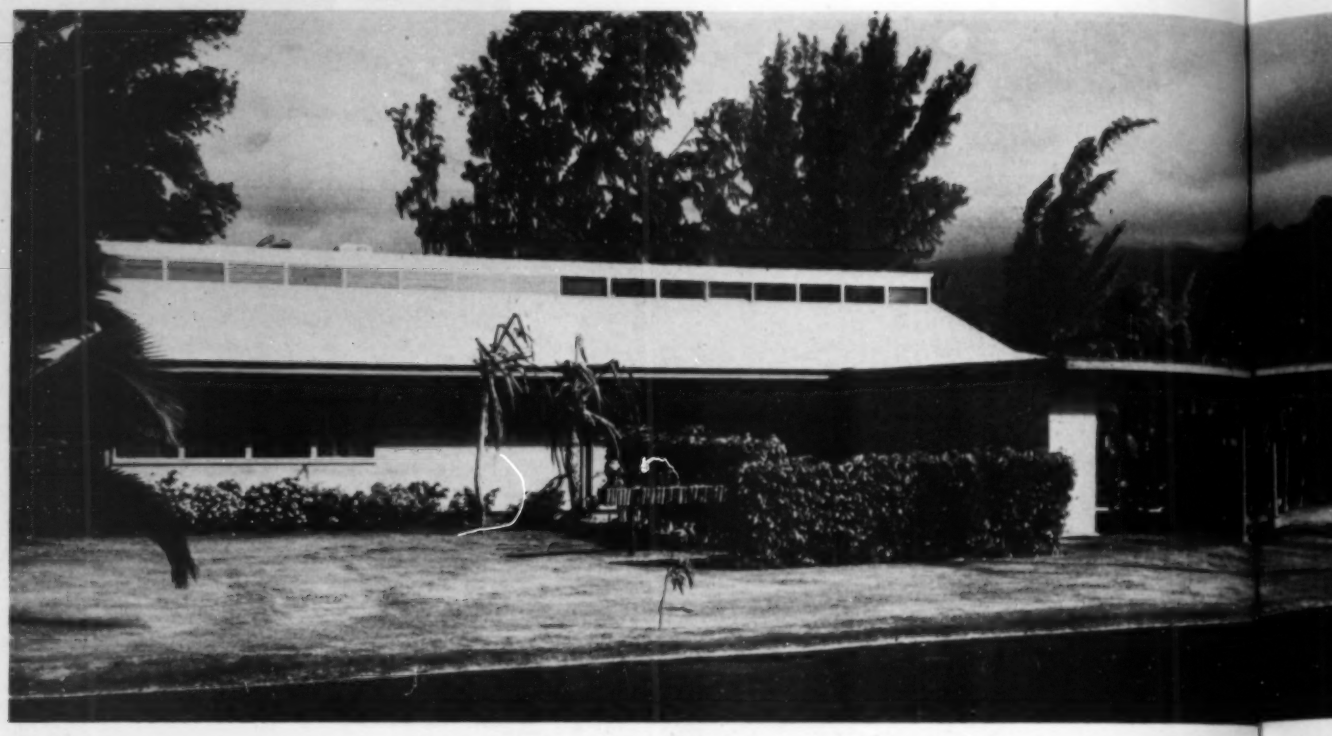
GROUND FLOOR



SECOND FLOOR 0 5 10 15

"HALEWAIHONA," KAILUA, T. H.

Residence of John H. McAuliffe, Jr.



John H. McAuliffe, Jr., Architect

Edwin A. Weed, Associate

AS MIGHT be expected, some of the most interesting features of Hawaiian architecture have been developed in the residential field. The mild climate in the Islands makes insulation against the cold unnecessary and most of the houses being built today have one-board-thick outer walls which are a Japanese derivative. Such construction not only is less expensive, it also eliminates nesting places for insects and vermin.

The architect-owner of this house, however, has developed his own system of framing (patent pending) which consists basically of a series of rigid frames erected on a modular basis, with all members secured by glue or screws, or both, and employing the use of dado joinery to ensure proper assembly. The system, first used in this building, has since undergone considerable simplification and modification.

Mr. McAuliffe's house is not in Honolulu, but on the windward side of Oahu, across the Koolau Mountains from Leahi Hospital (page 115). Small though it is, it displays a number of the features most characteristic of residential architecture in the Islands. It has a lanai and an adjoining barbecue terrace; it has protection from the sun and ample provision for the snaring of the cool trade winds; it is open and airy, but it has the privacy afforded by the Islands' profuse vegetation. Like most Hawaiian homes, it seems to have been designed more for living *out of* than for living *in* — a concept of living which may have shocked the missionaries of 1820 but which is familiar today to architects the world over whose clients are demanding more and more provision for outdoor living. It is, in effect, a still further refinement of the original grass shack which the Hawaiian native used, as Mr. Griffing has said, "for his most intimate requirements."

Ben Pang Photos

Framing—Wood

Exterior walls—Fir, stained

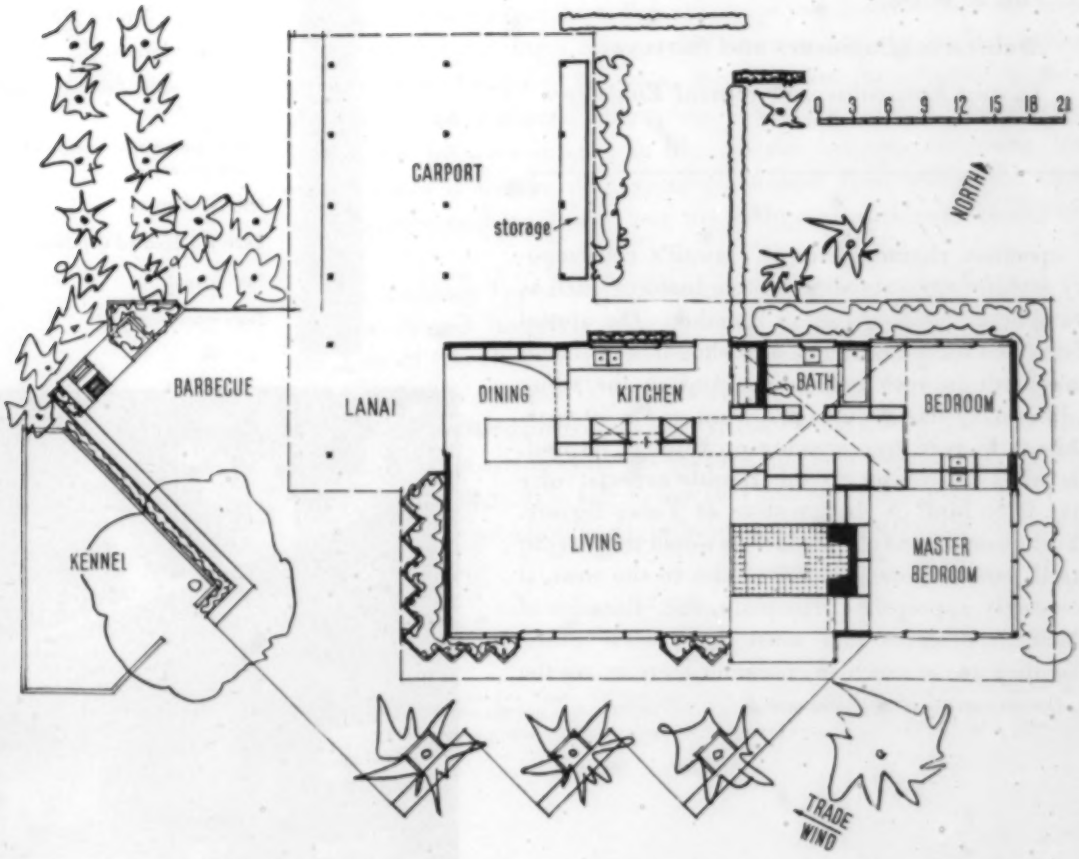
Interior walls—Same

Roof—Cedar shingles

Floors—Acid-stained concrete

Sash—Fir

Ventilating—Clerestory louvers



WAREHOUSE AND DRUGSTORE FOR LEE OI CHUN HOON, HONOLULU

R. Wenkam Photos

Law & Wilson

Architects, Engineers and Surveyors

Lo and Katavolos, Structural Engineers

Foundation—Concrete

Framing—Concrete

Exterior walls—Concrete block, stuccoed

Interior partitions—Concrete block and plaster

Floors—Concrete

Ceilings—Exposed Concrete

Sash—Steel

Store front—Aluminum

THE openness characteristic of Hawaii's contemporary architecture extends even to a building such as this warehouse and drugstore in Honolulu. The appeal of the city as a tourist center is, as it should be, particularly apparent in such a building. And so the Chun Hoon Pharmacy has a wide-open front and a 60-year-old Chinese banyan tree growing up through its roof. This is what the visitor to the Islands expects; why not give it to him? A similar store at Times Square, New York, would be as out of place as would the banyan tree itself, but in Honolulu, 5000 miles to the west, it seems entirely appropriate. Honolulu, the "Paradise of the Pacific," deserves and must have such exotic touches; they are as much in character there as are the lanais, the mountains and the sea.

MENTAL HOSPITALS

*"It is a fact too seldom reflected upon that the architects of today determine the procedures and practices of tomorrow . . ."**

ARCHITECTURAL RECORD'S BUILDING TYPES STUDY NUMBER 166

JUST a few years ago an architect in Michigan undertook a commission to design a 1500-bed mental hospital. He began by assembling available data on planning, found there was virtually none to assemble. So he started interviewing doctors — what should the program be? How would patients be classified and treated? How would buildings be classified, and what would they be expected to accomplish for different patient groups? Results were pretty hazy; answers didn't agree; there were too many variables. In the end this architect spent many thousands of dollars on basic research before he could even start to draw.†

As a planning assignment the mental hospital is not quite such a blank paper as it was in those days, but it is still not far from virgin territory. Basic reason is rapid changes in the concepts of psychiatric care. Today the effort is to uncover the illness earlier, perhaps in the general hospital, to get started on the treatment, so that the patient may be returned to his place in society, not filed away permanently in an asylum.

The need for psychiatric hospital facilities is almost a scandal. Surveys call for more beds in mental hospitals than in general hospitals. The Health Service puts the need at 310,000 new beds; the goal for general hospital beds is 255,000.

For the architect, the task is to give the medical profession such psychiatric hospital facilities as will contribute to the goal of cure-not-asylum. Psychiatric treatment is difficult at best. Beyond the physical needs, there are also those of the spirit, involving a considerable array of facilities for recreational and occupational therapy — for work, for play, yes for religious ministration. And, above all, a general atmosphere conducive to rebuilding the patient's confidence, his very interest in life. All this becomes expensive, but if it effects cures it will be immeasurably cheaper than permanent care. The need is expressed in "beds," but the architect's task is measured in other terms.

This Building Types Study is largely a presentation of selected plans of modern mental hospitals. The RECORD acknowledges with appreciation the help of the Division of Hospital Facilities of the U. S. Public Health Service both in selection of projects and in analysis of plans. Dr. Paul Haun of the Veterans Administration has written a program for just such a hospital as the Michigan architect had as his problem, as a means of presenting basic principles of design. It is safe to say that this study will prove to be the first of several — if ever a building type needed a literature it is the modern mental hospital.

— Emerson Goble

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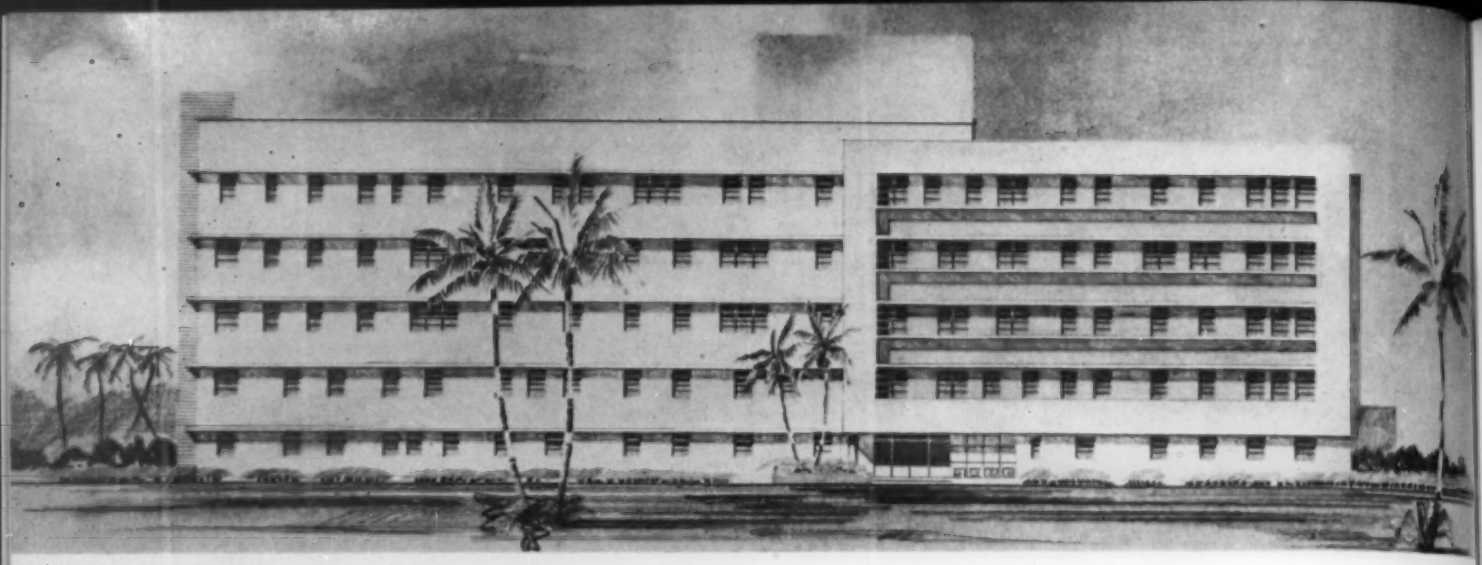
* *Dr. Karl A. Menninger, from his introduction to the book, Psychiatric Sections in General Hospitals, by Dr. Paul Haun, an* ARCHITECTURAL RECORD *book.*

† *Planning the Mental Hospital, by Owen A. Luckenbach,* ARCHITECTURAL RECORD, *June '47, p. 107.*

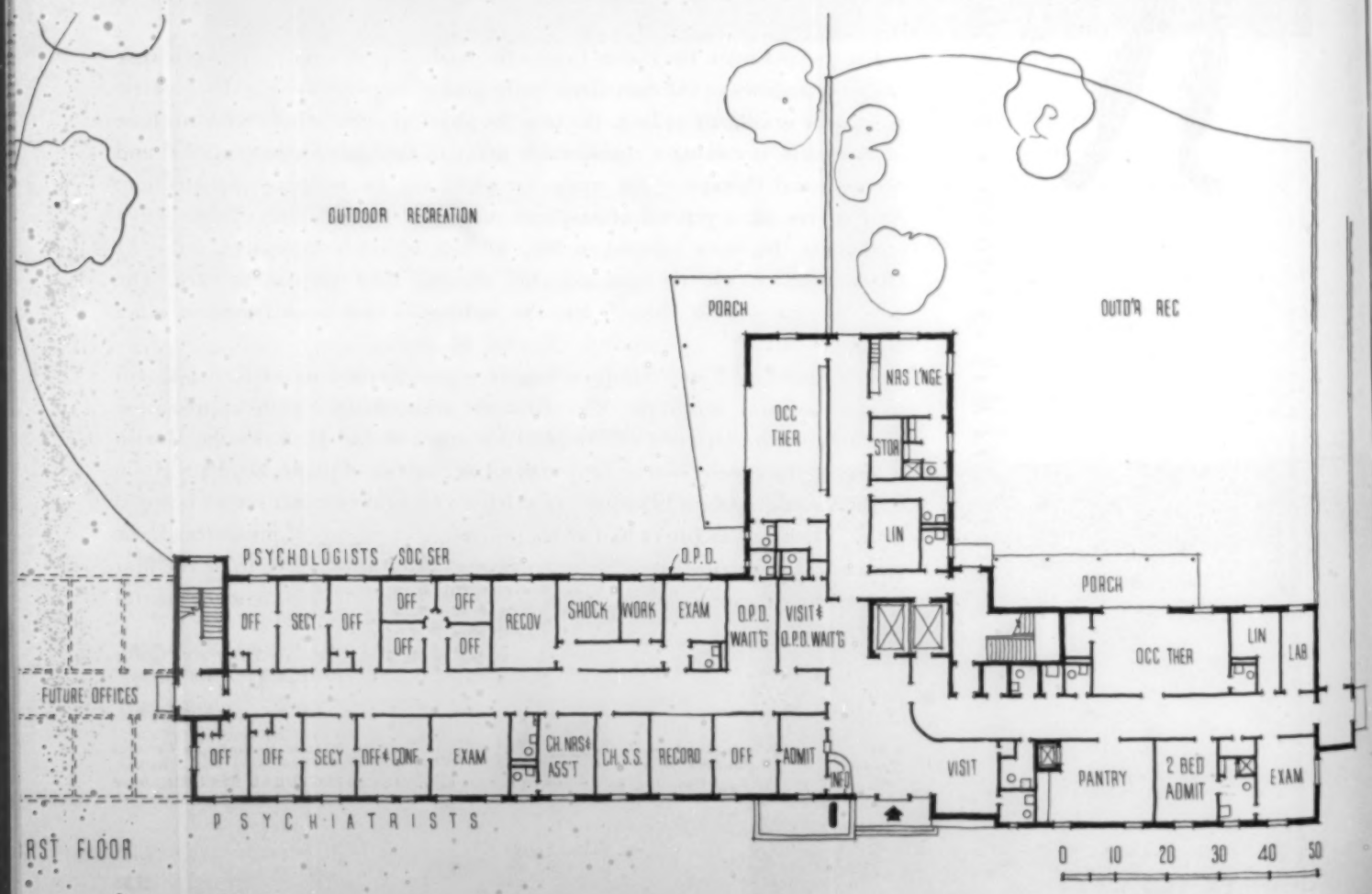


CONTEMPORARY MENTAL HOSPITAL TYPES

No. 1. Psychiatric Addition, Jackson Memorial Hospital, Dade County, Fla.

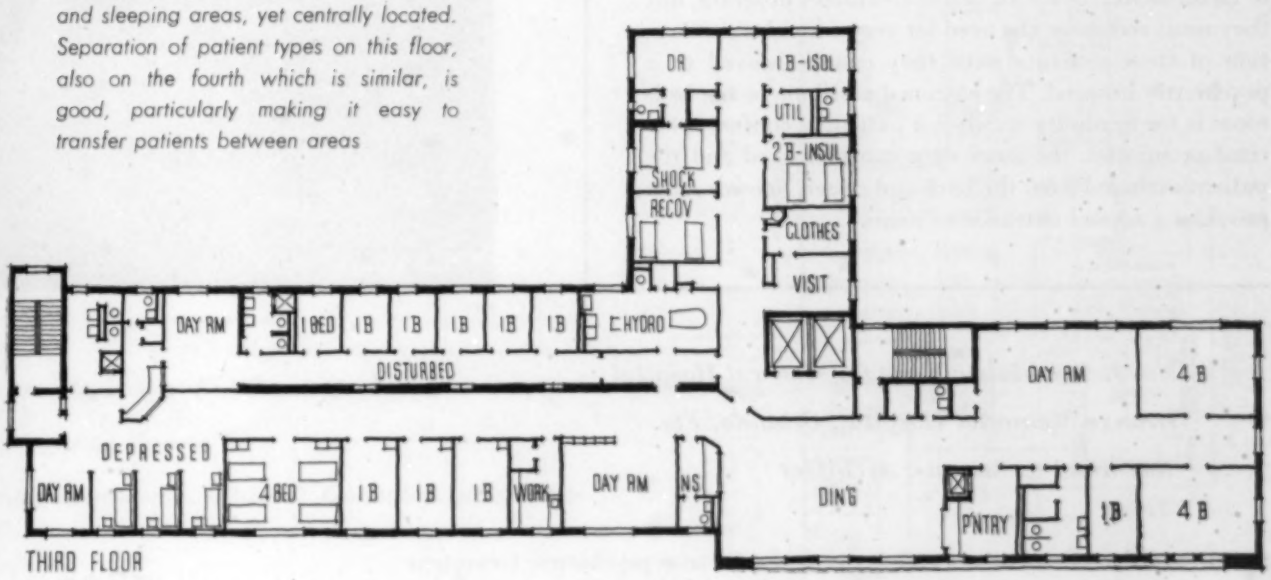
Steward & Skinner, Architects; Neergaard, Agnew & Craig, Consultants

THIS 100-bed psychiatric unit is one of several new buildings at Jackson Memorial hospital in a general replanning and enlargment program. It is placed away from the main building group, largely to provide for adequate outdoor activities. It was planned to add a complete mental facility, also to handle a considerable load in the outpatient department, both for new patients and for follow-up care. This department (first floor) is planned for two teams, each consisting of one psychiatrist, one psychologist, two social workers and two-and-a-half secretaries, each team figured to carry 20 patients per week. Fifth floor (private patients) tries out an arrangement of bedrooms intended to eliminate the need for separating different classifications of patients. Rooms have a double door entrance, so that a patient may be excluded from the bath should he become excited. The arrangement presupposes a higher than normal nursing personnel for private patients.



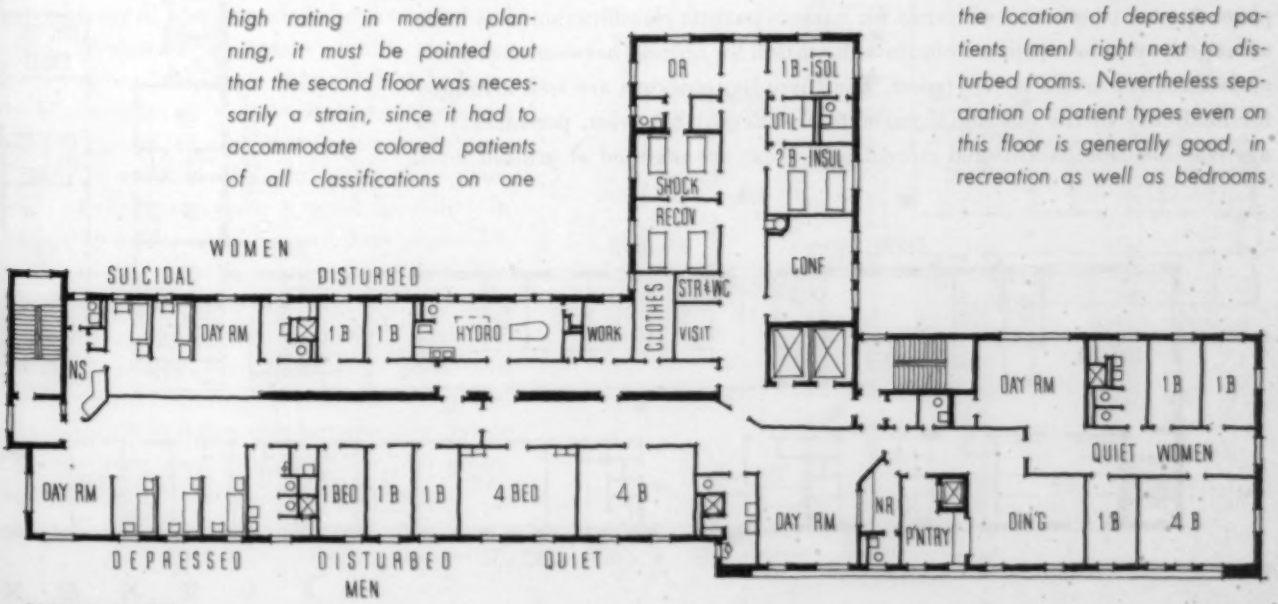
FIFTH FLOOR

Treatment rooms are concentrated in a separate wing well isolated from living and sleeping areas, yet centrally located. Separation of patient types on this floor, also on the fourth which is similar, is good, particularly making it easy to transfer patients between areas

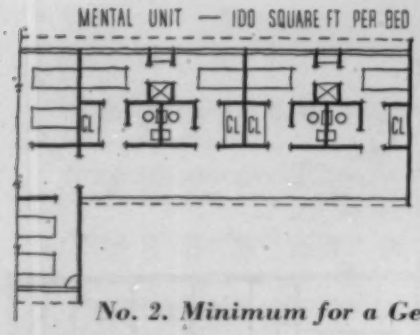


THIRD FLOOR

While this building deserves a high rating in modern planning, it must be pointed out that the second floor was necessarily a strain, since it had to accommodate colored patients of all classifications on one floor. A resulting bad feature is the location of depressed patients (men) right next to disturbed rooms. Nevertheless separation of patient types even on this floor is generally good, in recreation as well as bedrooms



SECOND FLOOR



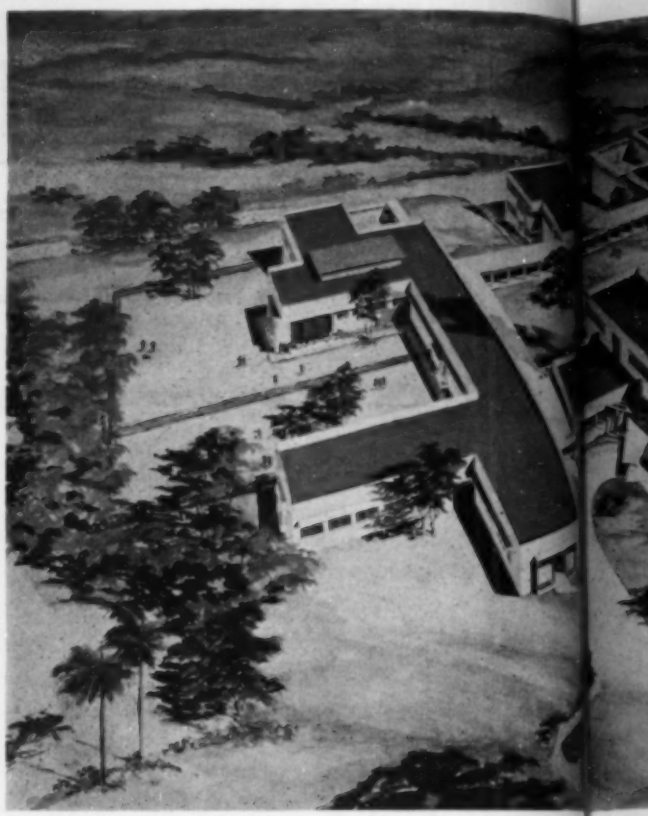
No. 2. Minimum for a General Hospital

San German Hospital, Puerto Rico

Toro, Ferrer and Torregrosa, Architects

Scheme for Mental Unit by Architects Paul Bauer and Bob Pope of the Puerto Rican Government

HERE is the minimum but necessary mental facility for the general hospital, not intended for treatment of nervous and mental patients, but merely for receiving and temporary housing until they can be transferred. Few small communities will have the trained personnel or facilities to provide an active treatment program, but they must recognize the need for very careful consideration of these patients until they can be moved to a psychiatric hospital. The entrance vestibule to the bedroom is for flexibility — when a patient is confused, excited or suicidal, the inner door can be locked and the patient excluded from the bath and closet. Shower room provides a second entrance to room.

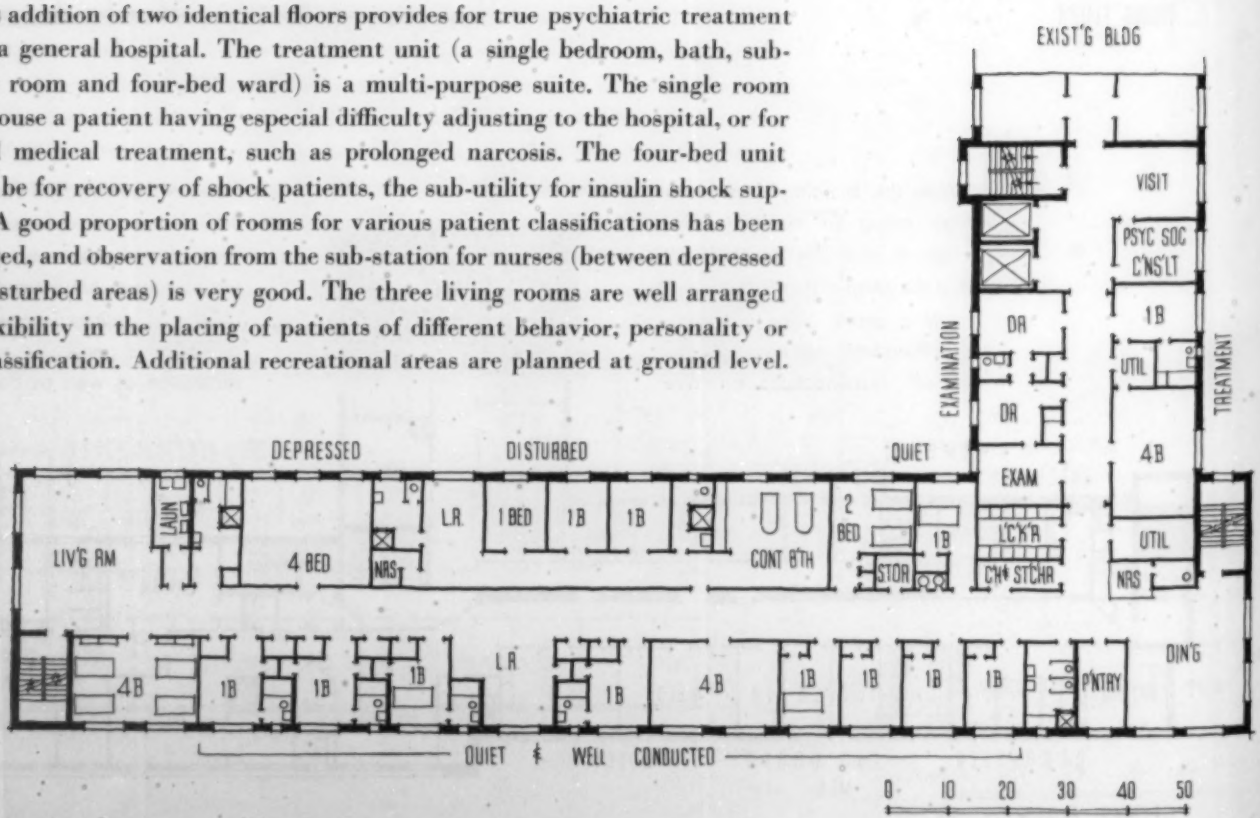


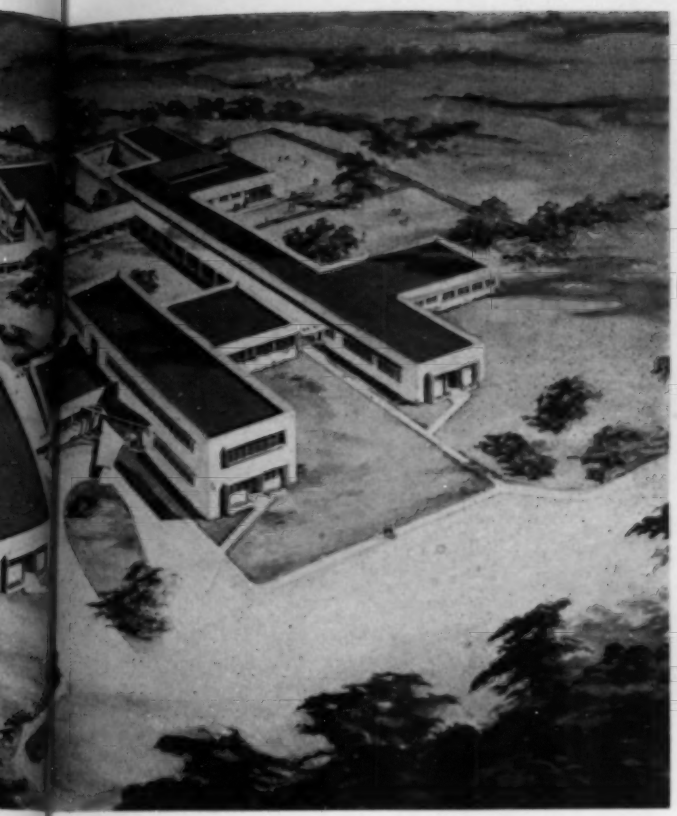
No. 3. Psychiatric Wing for General Hospital

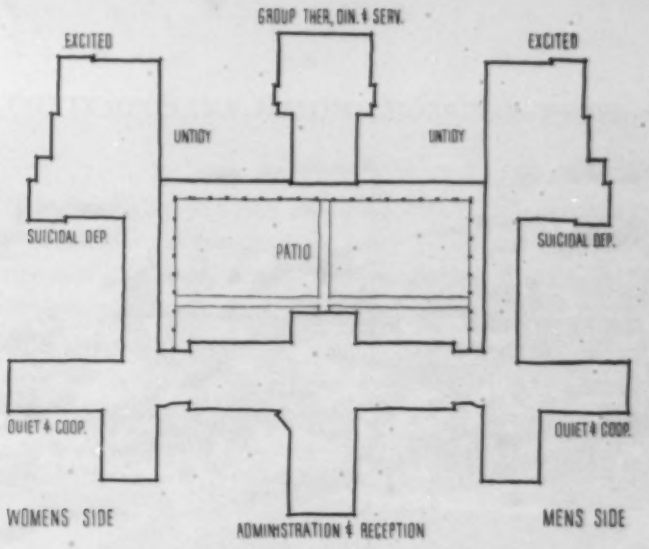
Orange Memorial Hospital, Orlando, Fla.

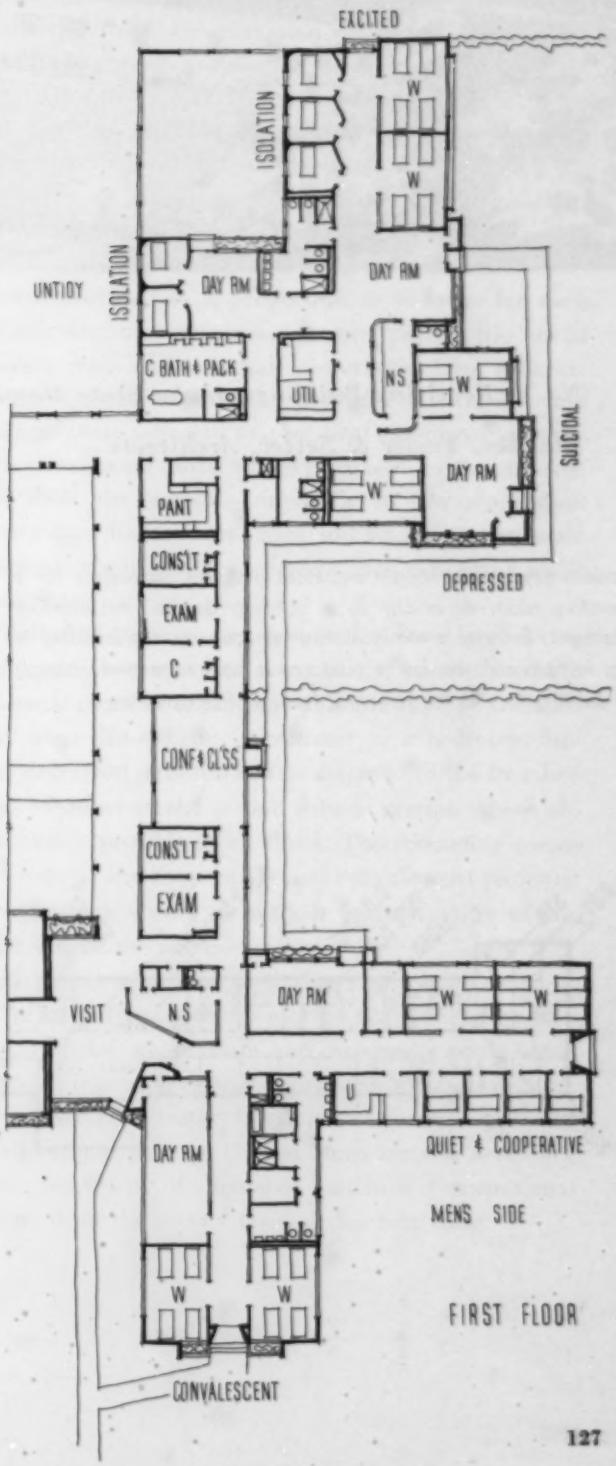
Raymond C. Stevens, Architect

THIS addition of two identical floors provides for true psychiatric treatment in a general hospital. The treatment unit (a single bedroom, bath, sub-utility room and four-bed ward) is a multi-purpose suite. The single room may house a patient having especial difficulty adjusting to the hospital, or for special medical treatment, such as prolonged narcosis. The four-bed unit might be for recovery of shock patients, the sub-utility for insulin shock supplies. A good proportion of rooms for various patient classifications has been arranged, and observation from the sub-station for nurses (between depressed and disturbed areas) is very good. The three living rooms are well arranged for flexibility in the placing of patients of different behavior, personality or age classification. Additional recreational areas are planned at ground level.







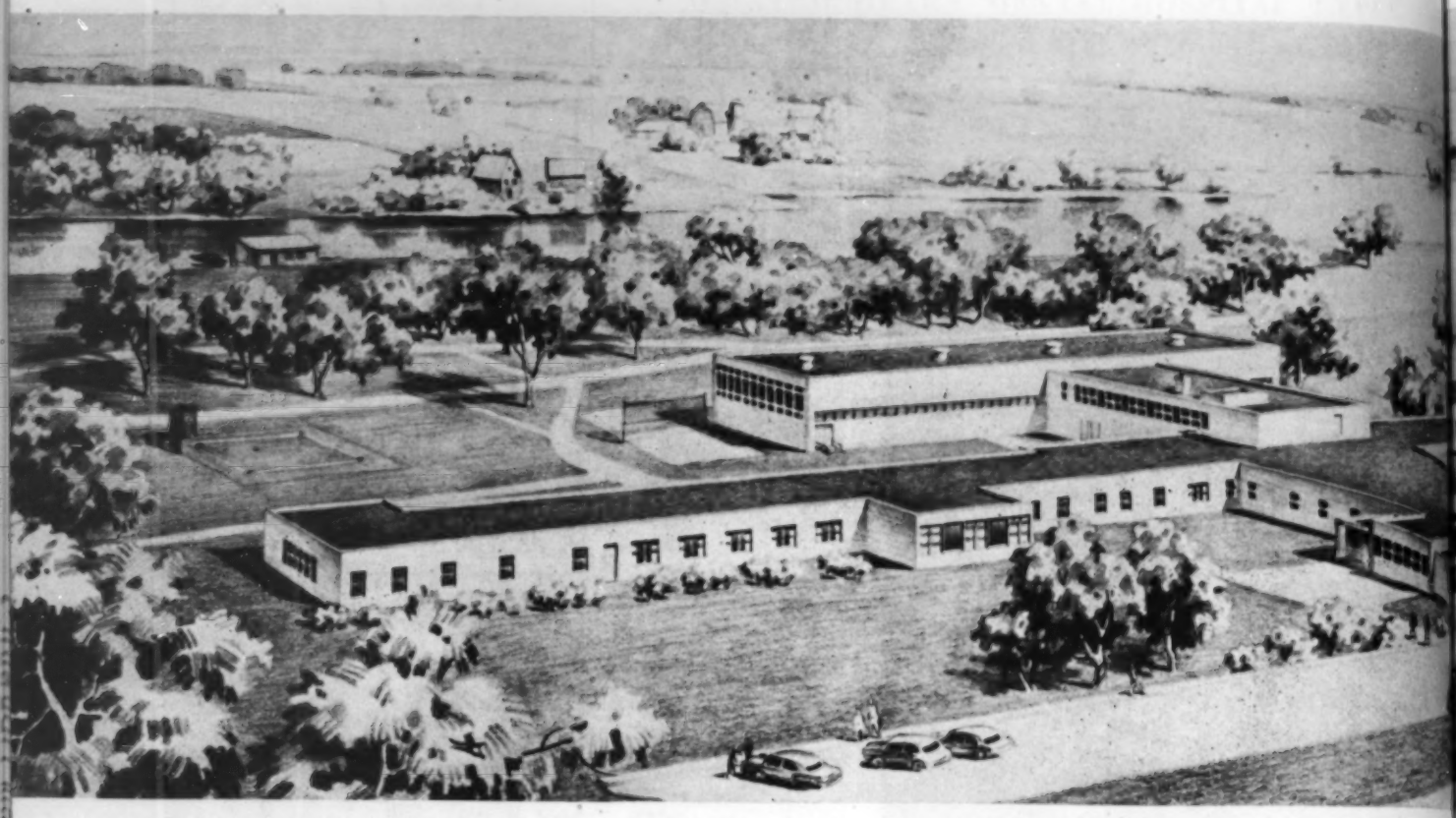


No. 4. Receiving Building, Psychiatric Hospital

Rio Piedras, Puerto Rico

Schimmelpfennig, Ruiz & Gonzalez, Architects

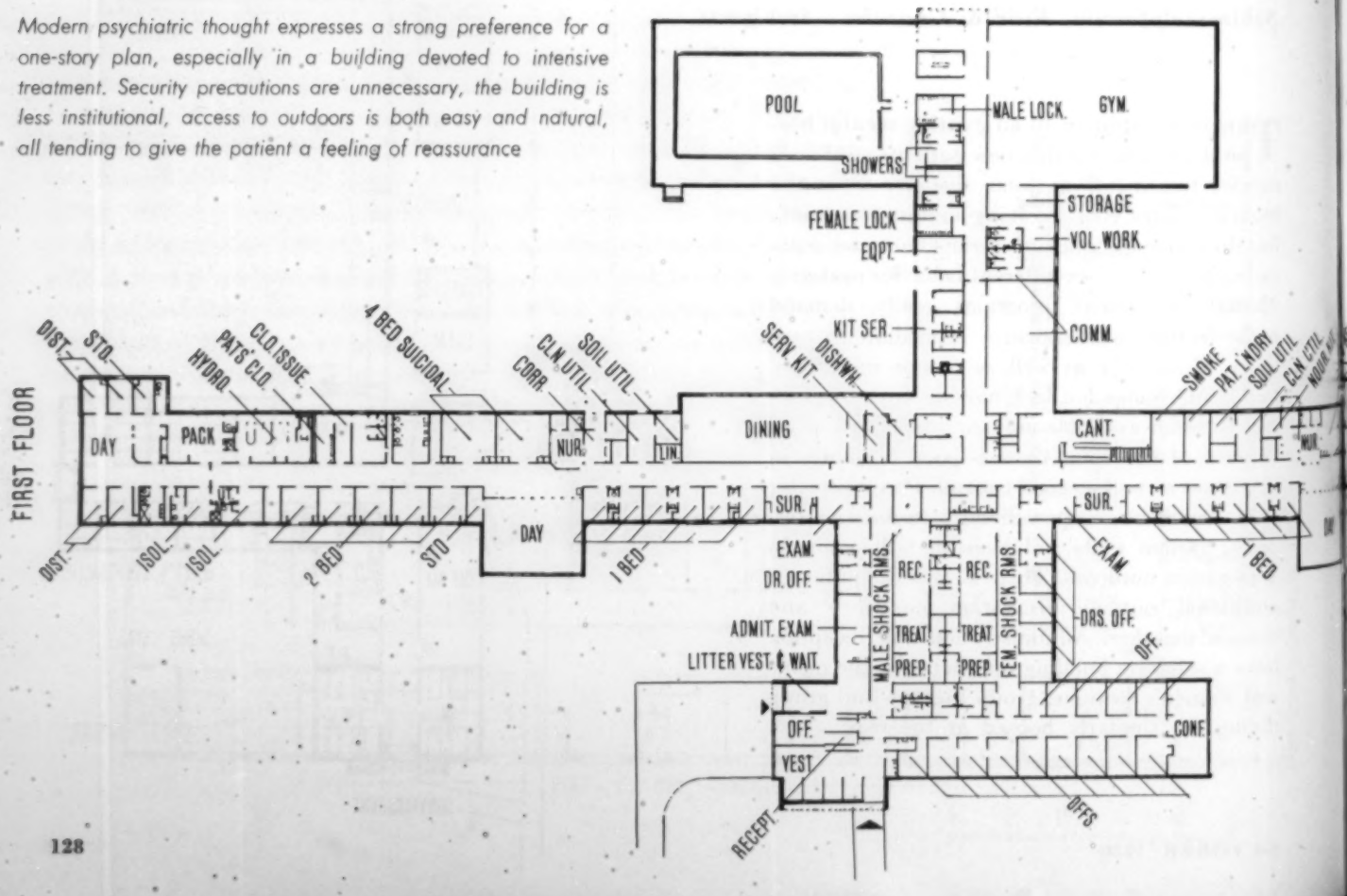
THIS is an addition to an existing mental hospital, recognizing that new patients need very careful treatment, at some distance from the main buildings. As a receiving building it is small, but does manage a flexible arrangement for separating patients of six different behavior patterns. Modern treatment programs really demand many features of this plan — immediate accessibility of outdoor as well as indoor recreation, two living rooms for each nursing unit, the general freedom available only in a one-story plan. In each of the units there is good flexibility in operation as well as good control. Day rooms for each classification open directly to outdoor terraces; garden walls and planting will maintain segregation outdoors. There is also the patio for additional outdoor recreation, for men and women together. Administration and reception have a separate building unit between the men's and women's sections; group therapy and group dining are similarly housed at the rear.

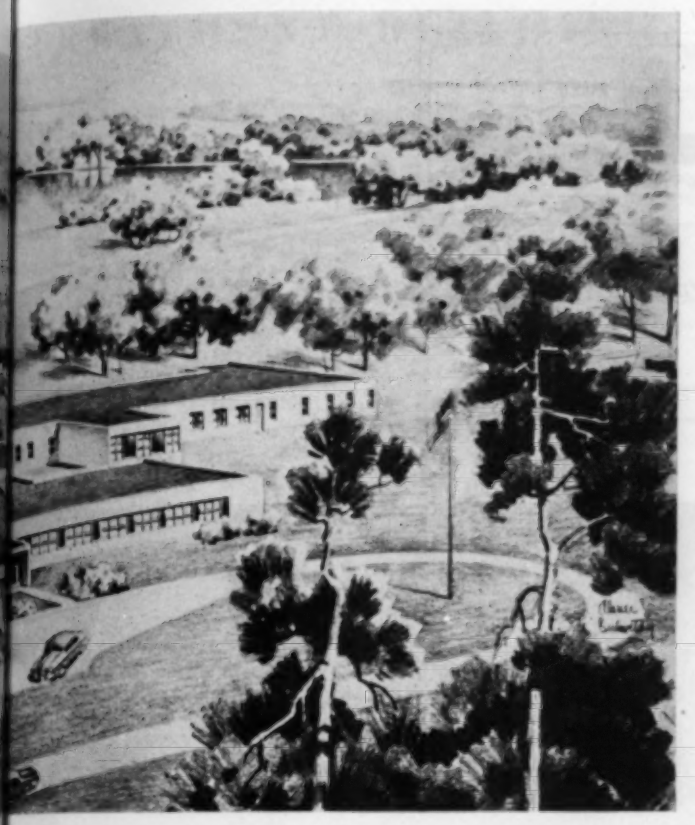


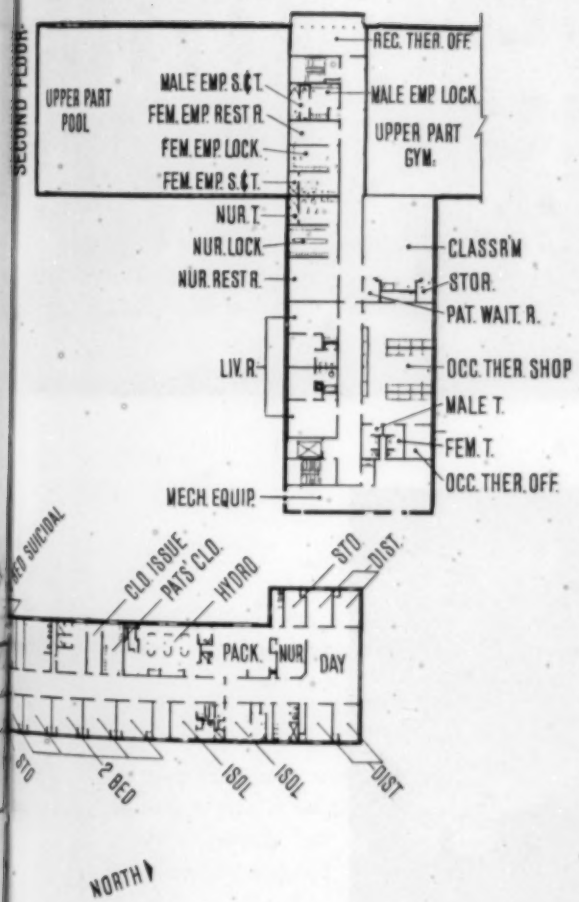
No. 5. Receiving Building, Anoka State Hospital, Anoka, Minn.

Magney, Tusler & Setter, Architects

Modern psychiatric thought expresses a strong preference for a one-story plan, especially in a building devoted to intensive treatment. Security precautions are unnecessary, the building is less institutional, access to outdoors is both easy and natural, all tending to give the patient a feeling of reassurance







THE receiving building at Anoka, one of Minnesota's state mental hospitals, is fairly typical of modern practice for this important facility. Such a building, in modern psychiatry, represents an effort to keep the new patient isolated from the main hospital for intensive treatment, at least until it has been decided that he is not curable. It is in effect a complete hospital by itself, except that it does not propose caring for the patients beyond from four to six months. The effort is made to give the new patient every chance at a cure.

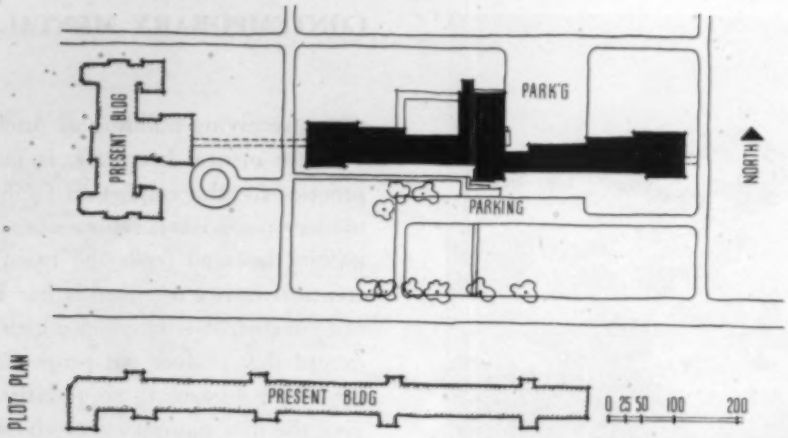
In designing the nursing units, the architects recognized that mental patients are, for the most part, ambulant and in need of ample areas for recreation and occupation; also for relaxation when the patients are not under a specific scheduled therapy.

A large out-patient department is provided both for new patients and for follow-up treatment of convalescing patients. Treatment facilities, removed from the in-patient areas, are readily available to both in- and out-patients without cross-circulation. Staff offices for psychiatrists, psychologists and psychiatric social workers are provided in a proportion as follows: for each psychiatrist, one psychologist, two psychiatric social workers, two and one half secretaries. The separate emergency receiving facility provides a bathroom and two bedrooms adjacent to a medical examination room.

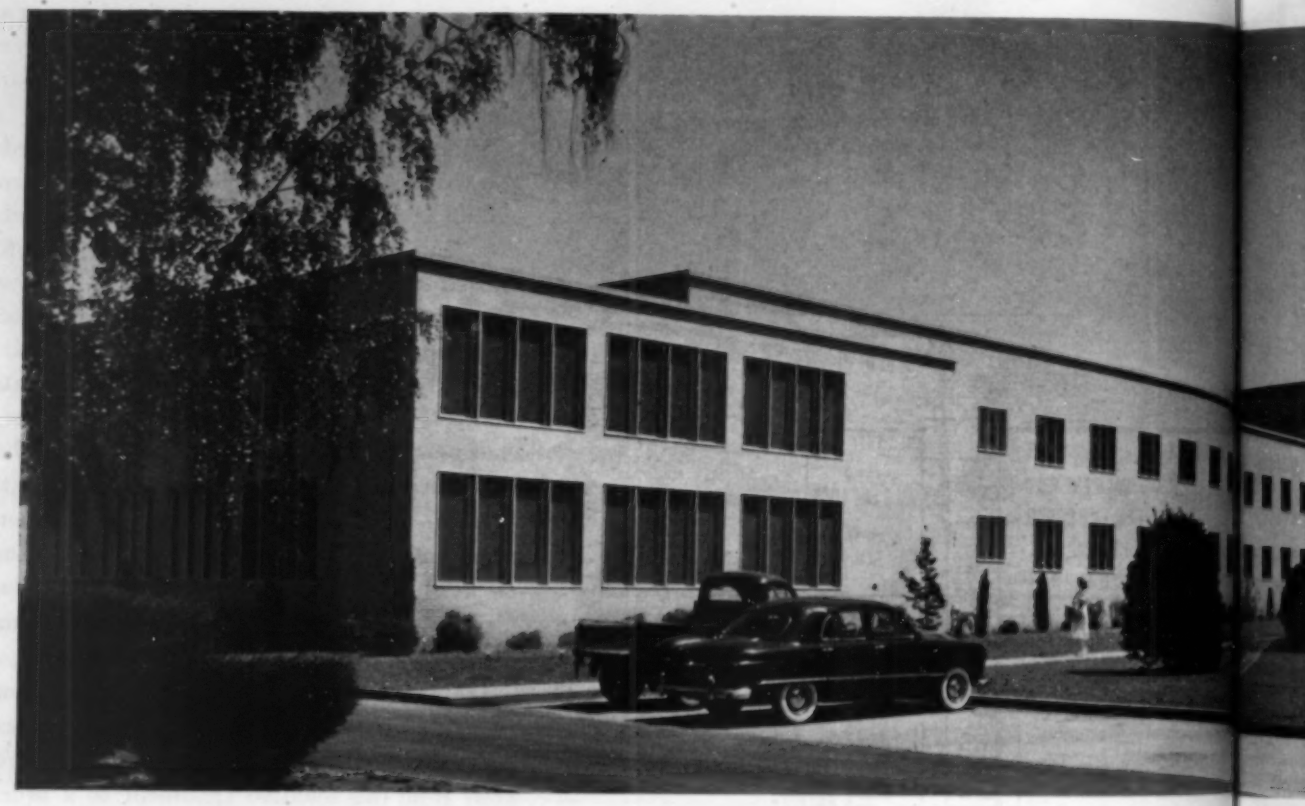
In the nursing units, the two nurses' stations in each unit limit the patients cared for to not more than twenty-five. Facilities for men and women patients are identical except that the women's wing contains a small laundry for patients' use.

Disturbed patients are provided with a large living room, and the unit is adjacent to the continuous bath and pack room in order that patients may go immediately from this sedative treatment to a bedroom. Suicidal depressed patients will be assigned to the four-bed room adjacent to the second nurses' station where observation is possible at all times. The remaining rooms are for quiet and cooperative and convalescent patients. Patients have access to outdoor areas by way of the corridor near the nurses' station.

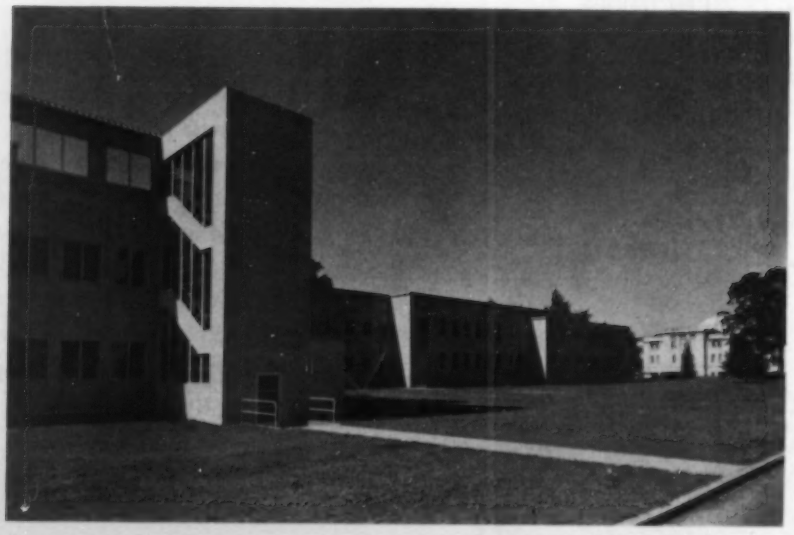
The dining room is for both men and women patients, and an attractive canteen is located near the community room, exercise gymnasium and swimming pool, which are to the rear of the nursing units. Swimming pools are particularly good in the treatment of certain depressed and disturbed patients. Gymnasiums are also necessary in the treatment of disturbed patients. Occupational therapy is on the second floor of this rear wing.



PLOT PLAN



Roger Sturtevant photos

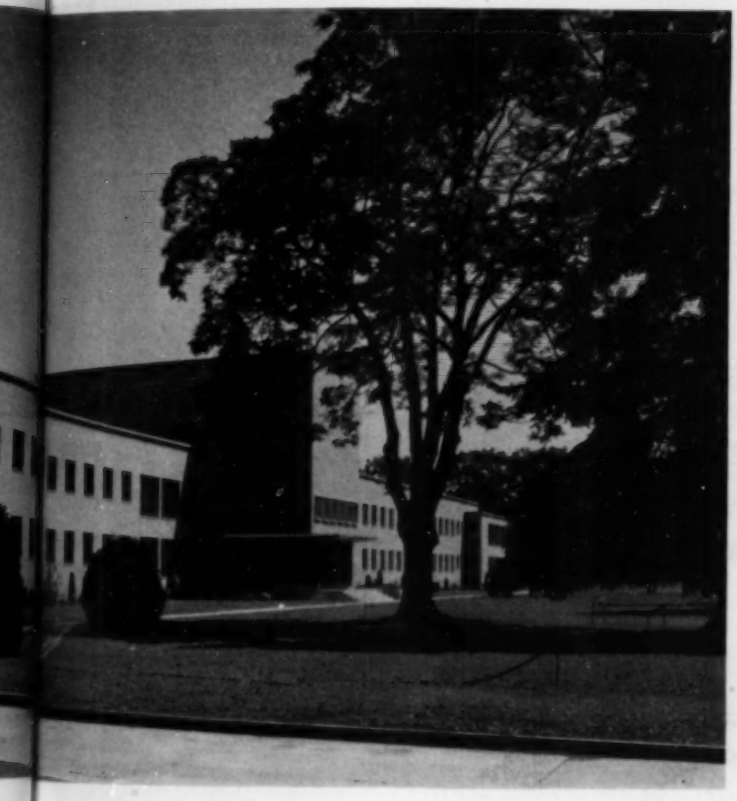


TREATMENT BUILDING, OREGON STATE HOSPITAL

Salem, Oregon

Pietro Belluschi, Architect

Miles K. Cooper, Structural Engineer
J. Donald Kroeker, Mechanical Engineer
Geo. Pettingell, Grant Kelley & Co., Electrical Engineers



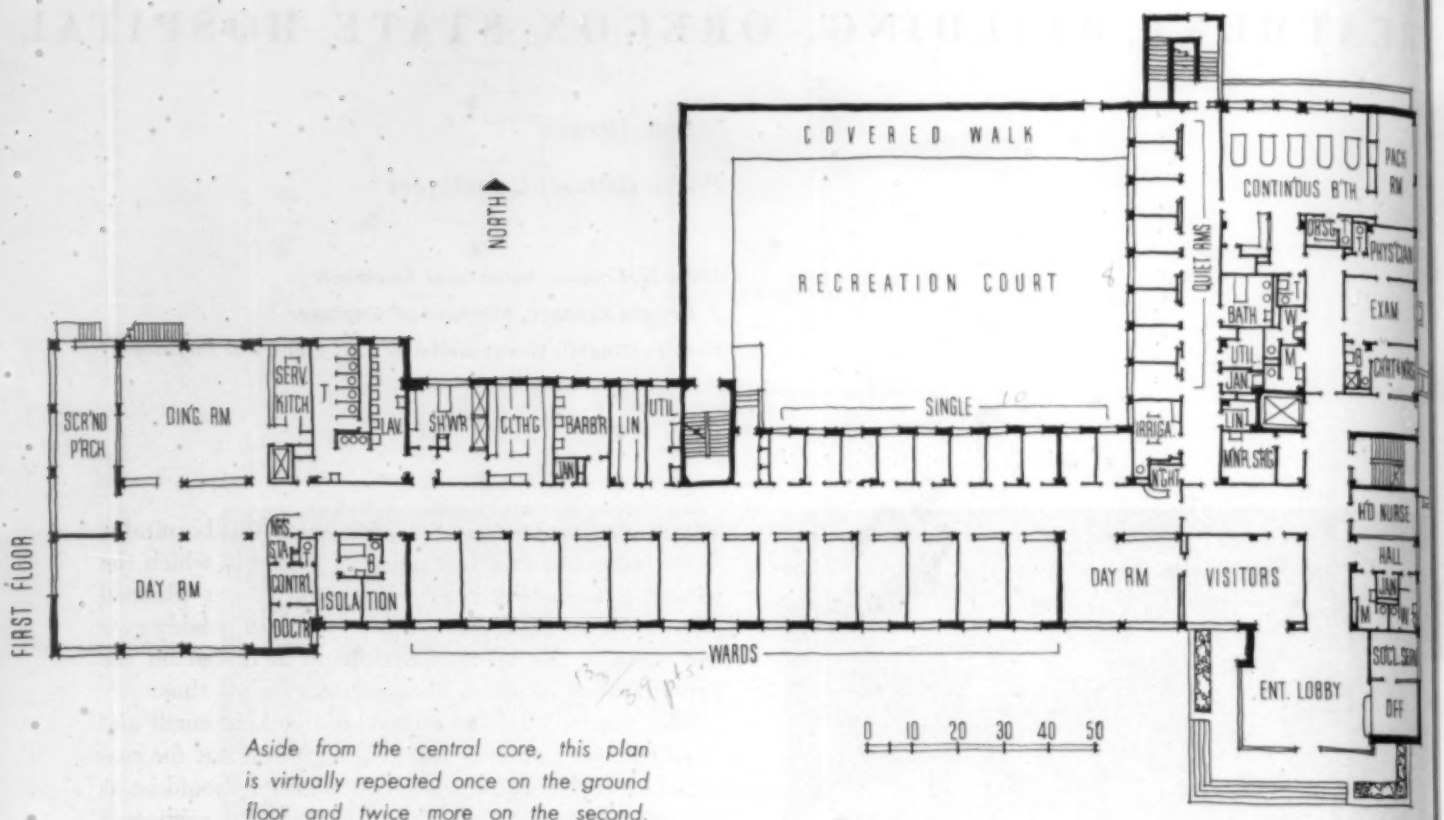
Perhaps nowhere else in the architect's practice are the spiritual values of design so urgently required as in the treatment for "receiving" or "admissions" building of a mental hospital. For here psychiatric science works intensively to rebuild the patient's interest in life in general and the pursuit of happiness in particular

PERHAPS the most notable thing about this hospital is its success in that last phase of design in which the patient gets consideration. The project was planned after exhaustive study over some years, but nobody ever lost sight of the effect of architectural design on the patients' state of mind. The architect puts it thus:

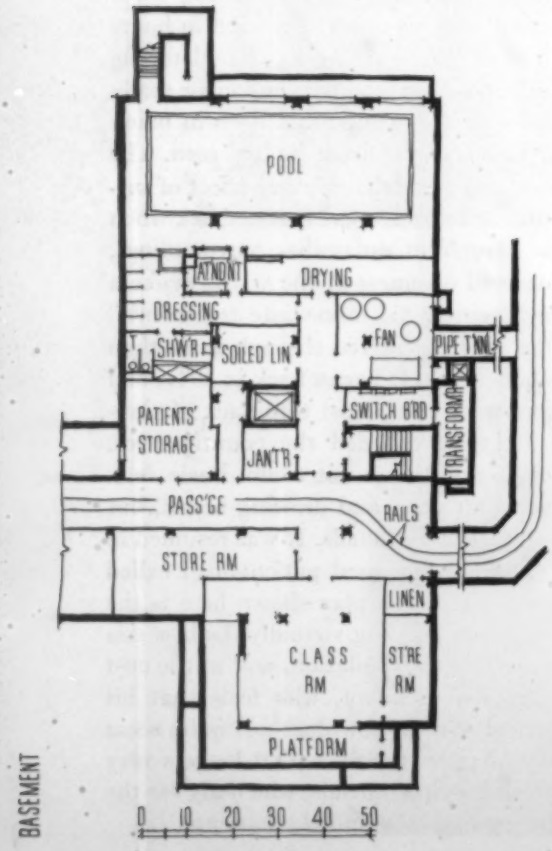
"We decided that the unit should be kept small and should be used entirely for treatment and not for custodial care; that the design of the interior should be as free as possible of the atmosphere usually connected with such institutions; that is be airy, colorful, and of such design as to induce mental recovery. The wards were to be kept small with fairly high percentage of single rooms, and ample facilities for dining and recreation. Various methods of treatment such as physiotherapy, hydrotherapy, and continuous baths had to be made easy and efficient."

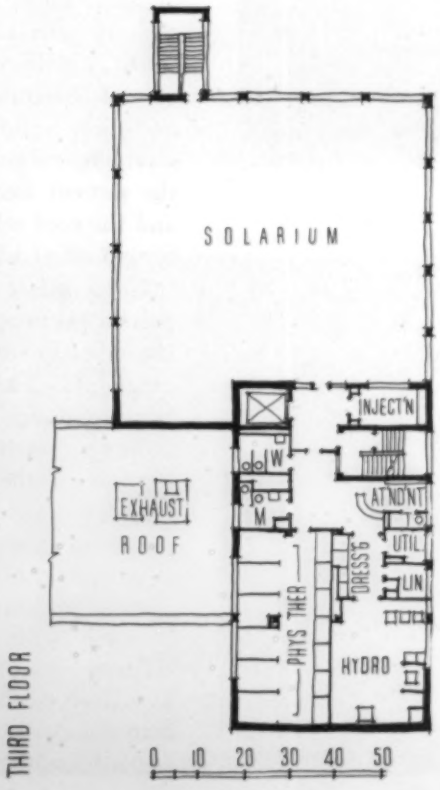
The photographer could not resist including some testimony as to results in his notes, gathered in hours of incarceration with his camera: "All this fine detailing plus the general scheme of architecture and color really work. A resident doctor told me he had been in many mental hospitals. This was the finest he had seen. The first thing he noticed here was the salutary effect of surroundings on patients. There seems far less shock when the patient finds himself in unfamiliar surroundings, and the cool colors and openness of the wards evoke a benign effect which greatly aid immediate treatment."

Nevertheless the project suffered through more than normal planning difficulties. It began back in 1941, and immediately encountered the almost total lack of planning data. The architect traveled the country over, learning things to do and things not to do. Basic decisions were made in that year, and drawing began, but the war put the project in mothballs. It was resumed in 1946, by which time the increased patient load called for doubling the capacity. The plan shown here is the original one; as built the building virtually doubles this scheme, at some sacrifice in circulation, and at the cost of some fussing by the architect, who feels that his original asymmetrical scheme now does not quite seem so logical. One can imagine, however, that he gets very little sympathy from hospital officials, who daily see the enthusiasm of the nursing staff and the patients.



Aside from the central core, this plan is virtually repeated once on the ground floor and twice more on the second. Treatment facilities are mainly grouped in the rear wing, to keep the patients' quarters as pleasant as possible. Also, disturbed patients are grouped in this wing, for isolation from other patients, and for easy access to treatment rooms

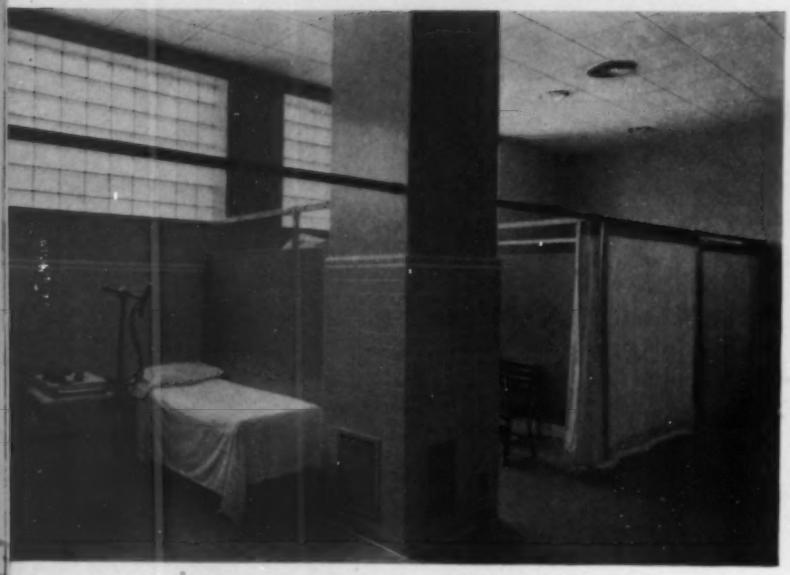




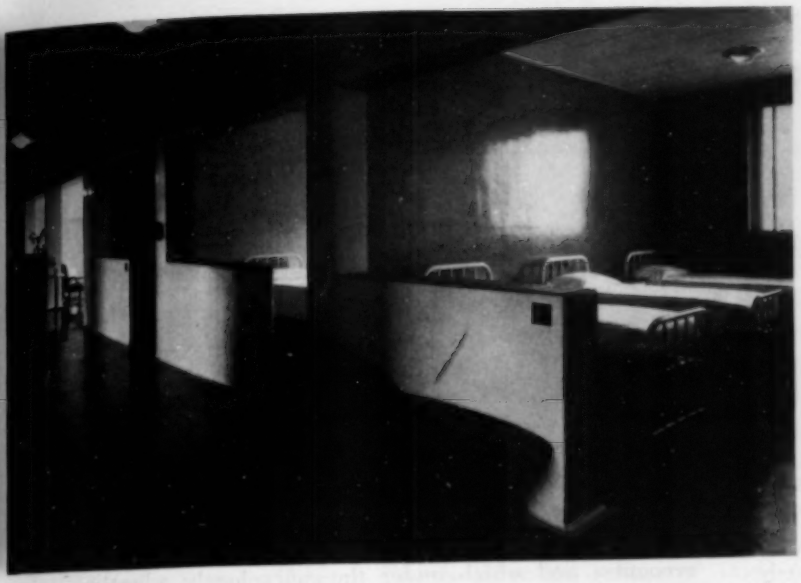
Central core houses the main therapy facilities used by nearly all classes of patients. Such grouping is obviously necessary for large items, but does involve long travel distances. The doubling of original plans was unfortunate necessity: in general terms, the larger the building becomes the more institutional it grows, while a certain intimate scale, with short travel distances, offers more encouragement to patients who are struggling to readjust, to reestablish their individuality

Roger Stuitevant photos

In the public areas, where a hospital tends to get most institutional, this one presents more the aspect of a modern hotel, with cheerful color schemes to give the patient stimulation and encouragement



Typical day room is large enough so that patients may find social contacts or may avoid them as his mood indicates. Privacy or change may further be had in the enclosed porch seen in the background



Left: hydrotherapy room and physical therapy booths on the third floor. Even here the scheme of colorful interiors is carried out, with large windows or glass block openings to keep them cheerfully lighted. Ward rooms are not enclosed by partitions; low corridor walls are high enough for a sense of division, not so high as to prevent ready observation

Roger Sturtevant photo

Main dining rooms and cafeterias open at one end of the day rooms, and meals are served on individual tables as in a restaurant, as part of the effort to keep patients in natural surroundings

By Paul Haun, M.D., Med. Sc.D.
Chief, Hospital Construction Unit
Psychiatry and Neurology Division
Veterans Administration

A PROGRAM F

What is a mental hospital? First question the architect faces is this one of concept, and the definitive stage of his project is likely to be the most difficult part of the entire assignment. Psychiatrists don't agree; neither do hospital administrators. Concepts of buildings are changing with progress of psychiatric science. The author here outlines a program for a 1500-bed psychiatric hospital for a state program. He offers it as a program, not the program. Nevertheless, the modus operandi and counsel he offers the architect will surely save much time and minimize costly redrawing

THE first problem facing an architect engaged in the design of a psychiatric hospital is determination of the program. Legislatures are interested in total costs, in financing plans and in results. The Department of Public Works looks for economy in construction and for sound engineering. Officials in the Department of Mental Diseases want a modern hospital functionally designed to meet the medical needs of its patients. Often the architect is expected to know how all of these aims can be accomplished without being given the hospital program in sufficient detail to allow him to proceed. We must remember the wisdom of the old recipe for rabbit stew and first catch our rabbit.

Medically acceptable construction standards for psychiatric hospitals have never been established by the American professional organizations, and with a science as rapidly progressive as the specialty of psychiatry this omission may well have been wise. Unless standards are subject to continual review and change, they tend to encourage an immobilization of medical practice at a level which may be rapidly outgrown. Lacking an authoritative statement by the psychiatric profession, the architect has as his guide the advice of individual physicians and the designs of existing hospitals. Venturing out of his chosen profession, he cannot be sure whether the advice he receives reflects good medical principles or is only the crotchet of the individual psychiatrist. Similarly, the design and arrangement of existing hospitals may contain anachronisms which he cannot recognize and which under the marvelously adaptive influences of daily use are no longer in the consciousness of the medical staff operating the institution.

Psychiatry's esoteric vocabulary makes no great contribution to mutual understanding. When to this difficulty is added a general lack of uniformity among hospitals as to the diagnostic categories in which patients are classified and a decided variation in the treatment programs upon which each relies, one ceases to be surprised at the architect's sense of frustration in attempting to serve his clients well.

A psychiatric hospital in the sense of the present discussion is defined as a *medical* institution built and maintained by public funds, having a full-time medical staff whose mission is to care for and treat patients suffering from long- and short-term illnesses coming within the purview of the medical specialty of psychiatry. It has the further social function of providing asylum for patients whose illnesses are reflected in behavior which society can or will not tolerate, and of treating these patients in an effort to bring about a remission of their disorder. Psychiatric hospitals differ from general hospitals in accepting for treatment a higher percentage of emotional and mental disorders; from psychiatric institutes in providing definitive care for such patients regardless of the duration or severity of their illness; and from private psychiatric hospitals in terms of size, of financing and usually of treatment programs.

Developing the Program

The program summarized here for the psychiatric hospital is not offered as the standard for all such installations, but does represent a coordinated, modern and integrated plan for the care and treatment of psychiatric patients. The questions it raises must always be answered whether or not the solutions it offers are applicable to individual circumstances. As an example of *a* program it may well simplify the architect's task of developing *the* program.

FOR A PSYCHIATRIC HOSPITAL

Location

Two initial considerations are of nuclear importance — *location* and *size*. It is not an exaggeration to say that no other issues will more directly affect the caliber of care which can be given at the hospital. State systems and federal agencies are having to face more and more directly the grim reality that rural psychiatric hospitals cannot be staffed. Custodial depositories for forgotten humanity, yes, but not hospitals. Sky-rocketing real estate values and the realities of psychiatric hospital operation both militate against urban locations for such installations. The logic of suburban sites with large personnel resources in the neighboring cities is inescapable, and they are being recommended with constantly increasing urgency. Where a choice can be made between locating a hospital near a city boasting a medical school or other well organized medical resource, and one lacking or deficient in both, preference should be given to the former.

The definition of suburban should not be strained to take in the entire surrounding county. As a rule of thumb one should begin to have serious doubts when the site is more than 10 miles from the business center of the city. Regularly scheduled bus or trolley service encourages the visits of relatives, an important factor in successful psychiatric hospital operation, and aids greatly in recruitment of desirable personnel.

The size of the site is to some degree a factor of the bed capacity, and should range from 250 to 400 acres. Irregular terrain is entirely suitable so long as moderately sized flat areas are available, either naturally or by fill, for athletic fields and gardening plots. Contour variations in the land are actually an advantage to the architect since he is less tempted to a regimented asylum arrangement of buildings, and is able to work out the complexities of service, ambulance, hearse, out-patient and visitors' entrances to his structures with more finesse, when the terrain is not too flat. *Bed capacity* should range between an optimal 1000 and a maximal 1500. The law of diminishing returns operates with iron inflexibility above the latter figure. Unit costs begin to rise if comparable standards of care are maintained, administrative problems begin a cycle of geometric progression, staff morale deteriorates, patients blur into anonymous tallies on a statistical report, and medical care begins to lose its professional identity. Below a thousand beds, unit costs start up again, diagnostic classification of patients into groups of appropriate size becomes progressively more difficult, specialized professional talent cannot be attracted or retained due to the limited case material, and medical efficiency of operation is sacrificed.

If we can then assume that a psychiatric hospital of 1000-bed capacity is to be located on an attractive, rolling site 8 miles from the business center of a city of 200,000, containing a medical school and an alert and capable group of general practitioners and medical specialists, certain conclusions can be drawn. It will be possible to staff the hospital properly; the duration of hospitalization for patients with illnesses amenable to treatment will be short, resulting in a rapid turnover for a sizable segment of the patient population; community interest in the hospital will be considerable and cooperative work with the staff in the discharge of its responsibilities easily stimulated; the hospital will be sought after as a training center and programs for social work students, cadet nurses, psychiatric aides, psychological trainees and junior dietitians are to be anticipated along with residencies in psychiatry for physicians. Lastly, basic and clinical research in the general field of psychiatry will in all probability be undertaken.

Planning the Building Program

What will be the components of a hospital of this kind? How many buildings will be required? What guidance can we find as to their individual capacities and functions, and how can they best be arranged on the site?

There are many workable classifications for psychiatric patients and a brief survey of the practices at existing psychiatric hospitals indicates that medical custom is exceedingly variable in this respect. A preliminary division into acute and chronic illnesses may, however, be made with scant likelihood of challenge from any medical source. This division ignores the age, the sex, and — unless it is so prominent a factor as to

require primary consideration — the physical condition of the patient. Trained psychiatrists can often within a few minutes, and at most within a few days, determine whether there is good likelihood of the patient's prompt social recovery under adequate treatment. Similarly they can with surprising accuracy identify the patient whose illness promises to be protracted and for whom a remission must be anticipated in terms of years of treatment rather than in weeks or months of hospitalization. To the untrained observer, the patient who may be well again in two months often appears far sicker than the individual who may never recover. The architect should plan, therefore, for two principal divisions in his hospital — an acute section where maximal direct therapy will be focused and patient turnover will be most rapid, and a chronic or long-term section in which treatment will be less individual, finding its expression in environmental regulation, group stimulation, emotional education and re-formation of hygienic behavior patterns.

Some physical separation between the acute and chronic sections of the hospital is desirable, both for the convenience of the staff in the most efficient administration of two rather distinct therapeutic programs and for the welfare of the patients themselves. An excellent means of achieving this aim is the location of the auxiliary treatment buildings between the two groups of bed-containing structures. Such buildings as the gymnasium, theater and occupational therapy shops are used with almost equal frequency by acute and chronic patients and so could not be more conveniently placed from the standpoint of accessibility to patients and convenience to the treatment staff. Their buffer function derives naturally from their location and the separation of the bed-containing buildings comes about naturally and with no apparent intent. Obligatory movement of acute patients through chronic areas is thus avoided and chronic patients have little occasion to visit the acute hospital zones.

The next step in the development of a psychiatric hospital program which must be regarded as scarcely less important than the selection of the site and the determination of the total capacity is the preparation of what we call "a criteria." As a participant in the recent development of plans for some 85 hospitals, 16 of which were predominantly psychiatric, the writer knows of no other item in planning that can contribute more to the success of a building program than a perfectly organized, meticulously compiled and compulsively accurate written criteria. The development of such a document is a devastatingly protracted task which will tax the patience of every participant and will rise to haunt the dreams of any contributor who thinks hospitals can be built by magic and not by sweat and by thought. The simple logic of "discipline by criteria" is overpowering. If the doctor, the architect or the engineer do not know what they want there is no genie who will leave it on their doorstep. Unless the architect has precise information on requirements before he sharpens his first drafting pencil, he will be harried to exhaustion by second guesses, after-thoughts, vacillations and assurances that everyone should know such and such a room is only half as large as necessary.

A criteria does not and should not preclude changes in the program. It should not be venerated as a command from Sinai from which no deviation can be tolerated, but used rather as a guide, the accuracy of which is maintained at the highest level. All the questions should be asked at the time the criteria is written. The operation and function of the hospital and of each building should be clearly stated, required buildings and their capacities tabulated and the physical characteristics of the total hospital and of its parts described. Each building should be defined in its own chapter and provision made for interleaving. A standardized format should be adopted and uniform categories set up: site location, general design, use of the building, planning requirements, patient bedroom sizes, etc. Major headings should be repeated from chapter to chapter and in their simplest form might include visitors' facilities; administrative facilities; nursing unit facilities; personnel facilities and service facilities. Nursing unit subheadings should include the number of nursing units; bed distribution on each; nursing facilities; patient facilities; medical facilities; housekeeping facilities; common facilities; adjunct facilities; food service and special medical facilities.

An equipment schedule should also be compiled and arranged in such form that cross reference with the criteria is simplified. Equipment of all kinds, whether portable or permanently installed, must be listed if the schedule is to guide the architect in determining proper space allowances for all rooms and areas in his initial design. Almost as much time will be spent in the selection of equipment as in the development of the criteria itself, yet every decision made at this stage in planning will bring a rich reward in the months of work to come.

Although detailed planning on the arrangement of equipment cannot be done at this stage, the architect can save himself much later effort by discussing hypothetical layouts with the responsible medical authorities of the hospital and by learning the precise function of each room he will be called upon to equip. What is done here? How many people are involved? How often does it occur? What are the steps in the procedure? All are questions which need to be asked and to be answered before the designer starts to work.

Many architects prefer to leave the development of a finish schedule until after the completion of Phase A drawings and this delay often does have the advantage of simplifying the final decisions. Other general considerations, however, such as the selection of sash and of heating and lighting systems should be made at once. It is also expedient to determine at an early date whether buildings are to be connected with tunnels or with corridors. The architect cannot afford to be

stampeded into premature work at the drafting board, and he will be well advised to resolve as many uncertainties as possible before he unrolls his first sheet of tracing paper.

The architect experienced in hospital work needs no reminder of the necessity of records, but for the man who is undertaking his first commission, it is easy to consider them needless formalities. The written criteria and equipment schedule will insure a broad base of common understanding. Every meeting, however, between the architect and his client should be accurately recorded and all decisions reviewed and confirmed by the interested parties immediately thereafter. Not only is this a businesslike protection to both principals to the basic contract, but it will also constitute an invaluable source of information and of guidance to the architect in all stages of his coming task.

If we assume that a criteria is to be written, what will be its content for the suburban 1000-bed psychiatric hospital we are projecting here? We have already said that the bed-containing structures will be divided into an acute and a chronic group. Prototype buildings and capacities for each are suggested in the following tabulation:

Building	Bed Capacity for Each Bldg.	Nursing Units In Each Bldg.	Approximate Square Foot Area for Each Building
ACUTE HOSPITAL ZONE			
2 — Reception & Treatment Buildings	120	5	105,000
1 — Clinical Building	240	9	188,000
CHRONIC HOSPITAL ZONE			
2 — Continued Treatment Buildings	160	4	59,000
1 — Infirm Building	100	2	37,500
1 — Disturbed Building	120	4	69,000
1 — TB-NP Building	160	4	84,000
TOTAL	1180		

Provision should be made on the site plan for future expansion through the erection of one additional continued treatment and one infirm building, raising the potential final capacity of the hospital to 1440 beds. Bed requirements above this figure would be met by the erection of additional hospitals having a similar distribution of beds. Psychiatric hospitals, like airplanes, can be designed for only limited increases in total load. When the margin of tolerance is exceeded, their continued operation rapidly passes from the hazardous to the impossible.

Reception & Treatment Building (Male)

All incoming male psychiatric patients will be admitted first to this building for detailed examination, classification and intensive therapy. Patients with favorable prognosis will be treated here for periods of four to six months in the hope that a return to the community can be effected without the necessity of transfer to other wards of the hospital. Five nursing units will permit a high level of differential classification by behavior. Patients from this building will make full utilization of facilities in the auxiliary treatment buildings: recreation, occupational therapy, gymnasium and theater. Patients with unfavorable prognosis whose improvement under active treatment is improbable will be transferred within short periods to an appropriate building in the chronic hospital zone for long term therapy.

Reception & Treatment Building (Female)

Similar in all major respects as to design and function to the building for male patients.

Clinical Building (Male and Female)

This will be a general medical and surgical building of 240 beds, 140 of which are devoted to the care of non-psychiatric medical and surgical patients who enter the hospital for treatment of such disorders as pneumonia, appendicitis, etc. Such patients will be mentally competent in every respect. In addition, four separately designated nursing units (two male and two female) will care for the physically ill among the psychiatric population of the hospital. Ambulant patients, psychiatric as well as non-psychiatric, will be served by out-patient clinics.

The inclusion of non-psychiatric beds in this building is a departure from the traditional practices in many public psychiatric hospitals, but is by no means without precedent. There are telling medical arguments in favor of the plan. It is almost impossible to recruit a competent full-time professional staff in the relevant specialties of internal medicine, surgery, roentgenology, pathology, biochemistry, anaesthesiology and nursing if their clinical work is confined exclusively to psychiatric patients. As a result many psychiatric hospitals are unable to provide medical and surgical care for their patients of a caliber equal to that readily available in the average general hospital. From the standpoint of economics, it should be remembered that the medical care of psychiatric patients will require a completely equipped clinical building in any event, and that its facilities can be expanded at very modest cost in the initial design to care for another 140 beds.

Essentially the proposal made here is that a county or municipal hospital of moderate size be incorporated in the plans for the public psychiatric hospital in the interests of more economical operation for both institutions and with the inevitable result that medical care will be of a higher caliber for each. Hesitation on the

part of the general public in using the facilities is a chimera which has failed to materialize wherever the plan has been tried.

Continued Treatment Building (Male)

Patients cared for in this building will require hospitalization for long periods of time, some of them permanently. They will, in general, be orderly, reasonably cooperative and in good physical health. All will be ambulant. Many will be engaged in various aspects of hospital industry, and some will have the freedom of the hospital grounds. Large numbers will employ the facilities of the auxiliary treatment buildings previously mentioned.

Continued Treatment Building (Female)

Similar in all major respects as to design and function to the building for male patients.

Disturbed Building (Male and Female)

Patients cared for in this building will be chronically disturbed, periodically uncooperative and assaultive on occasion. Suicidal tendencies will be common and exceptionally close supervision will be necessary. Although most of their activities will be centered in their own building, groups as well as individual patients frequently will be taken to the out-patient clinics in the clinical building and to the auxiliary treatment buildings.

Infirm Building (Male and Female)

This building will house elderly, feeble and physically incapacitated patients whose relatively static disabilities are too chronic to warrant care in the clinical building. Certain of them will be bedfast and others will require wheel chairs. Most of their activities will be centered in their own building, but groups as well as individual patients will not infrequently be taken to the out-patient clinics of the clinical building and to the auxiliary therapy buildings.

TB-NP Building (Male and Female)

The building will be used for the care of psychotic patients with co-existent tuberculosis. The building will be equipped to treat both long- and short-term psychiatric cases and will also have the necessary facilities for the care and treatment of tuberculosis. Major surgical procedures and much of the laboratory work will be carried out in the clinical building.

Structural components of the six prototype buildings described above will vary in relation to their function and capacity. Buildings in the acute hospital zone will be of multi-story construction in order to permit the most efficient utilization of staff time and to allow for ready movement of the individual patient to and from those locales in which specialized therapy is carried out. Buildings in the chronic zone will be of one- and two-story construction to permit the rapid assembly of patient groups and their ready access to the out-of-doors and to the auxiliary therapy buildings. Self-sufficiency for each building without wasteful reduplication of facilities will be achieved as far as good medical practice dictates. For example, ward dining rooms and floor serving kitchens will be provided for each nursing unit in the hospital with the exception of the continued treatment buildings. Two nursing units per floor in single- or two-story buildings are recommended and no more than three for the multi-story acute buildings. Additional nursing units in either category have, in the experience of the writer, introduced insuperable difficulties in circulation and resulted in wasteful cubages for the structures.

Integrity of the individual nursing unit is maintained in each building, and the block plan avoided since it is particularly unsuited to psychiatric operation. Rooms will be of single-, 4-, 8- and 16-bed capacities and will be distributed in the nursing units of various buildings in accordance with their peculiar needs. Minimal square-foot areas for beds are unsatisfactory since they do not preclude the development of miserably proportioned rooms entirely unsuitable as bedrooms. A more reliable guide is to space beds on 8-ft centers and to always provide three exposures for 8- and 16-bed rooms. Particular attention should always be given to circulation and the movement of patients individually and in groups. Corridors should be 8 ft clear and bedroom doors in indicated buildings of sufficient width to allow for the passage of a stretcher. All rooms must be completely visible from the door in the interests of psychiatric security.

Basic components of all psychiatric nursing units consist of the following:

A. *Bedrooms*

Preferably of three capacities (e.g., 1, 4 and 16 beds) to allow for diagnostic and behavioral classification of patients.

B. *Offices*

Five required: Doctor's, nurse's, ward secretary's, doctor's examining room and interview room for ancillary professional personnel.

C. *Patients' Facilities*

Solarium; occupational therapy closet; dressing room; bathroom; clothing locker room; visitors' room.

D. *Utilities*

Subutility room; linen closet; ward supply closet; soiled linen room; nourishment pantry; janitor's closet; personnel toilets.

Upon this basic skeleton may then be added one or more special treatment rooms, a ward dining room, a full sized utility room, an isolation suite for contagious diseases and additional offices as determined by the special therapeutic program conducted in the building. Readily accessible to all wards of the particular building, but not included in any of its nursing units, additional facilities the nature of which will depend on the special function of the structure may be added: a patients' work-detail room; a physical medicine suite; enclosed outdoor garden and exercise areas; a centralized hydrotherapy suite, exercise room and occupational therapy shop; a library, recreation hall, canteen and and barber shop; fluoroscopy, pneumothorax and minor operating rooms along with provisions for sputum disposal and incineration; centralized patient clothing and baggage storage space, an admitting suite, an auxiliary kitchen, administrative facilities, conference rooms, O. D. rooms and offices and classrooms for social workers, psychologists, nurses and residents. The additional facilities required in the clinical building such as laboratories, X-ray suites and operating theaters are all sufficiently familiar to need no particular mention here. This building should provide the services and equipment to be expected in a modern general medical hospital of comparable capacity. Four of its nursing units, each of approximately 25-bed capacity, should be equipped with accepted psychiatric security features, detention screens and tempered water being the most important, but may otherwise be designed and laid out in essentially the same fashion as for the non-psychotic nursing units.

AUXILIARY TREATMENT BUILDINGS

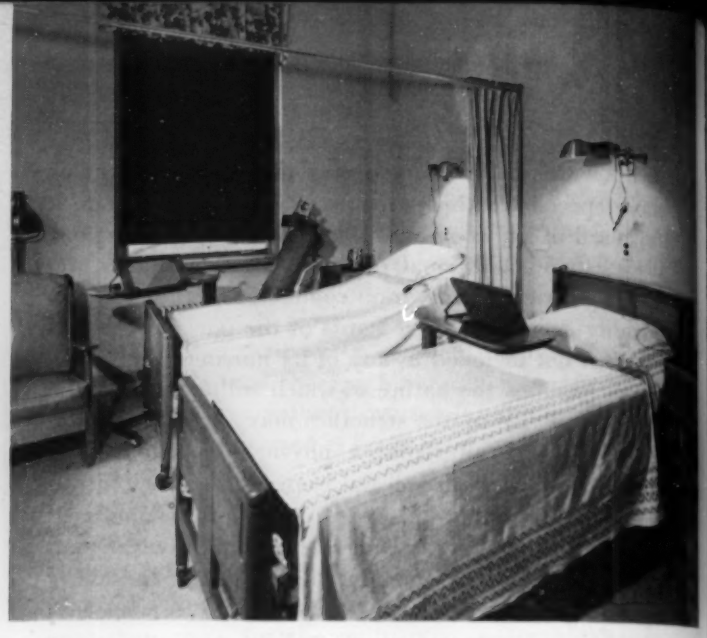
Building	Approximate Square Foot Area for Each Building
Gymnasium & Swimming Pool	20,500
Occupational Therapy Shops	14,500
Recreation & Library	29,000
Theater	15,500
Chapel	6,000

The structural nature of each building tabulated above is apparent from its description. Its particular function in terms of psychiatric hospital operation is not clear, however, from the architectural designations. The gymnasium could more correctly be called the *Sedation and Tranquilization Unit;* the theater the *Emotional Re-educational Clinic;* and the recreation hall the *Resocialization Suite.* The occupational therapy shops give opportunity for the re-formation of hygienic habit patterns. Treatment here encourages the use of as much of the total personality as the patient is able to mobilize, promotes his integration, affords him means for abreaction in which material at almost any level of consciousness can be externalized and helps to orient him away from intra-psychic phenomena and toward reality. The chapel affords a setting for spiritual ministration to the sick, traditionally one of the highest functions of the clergy. Nowhere is it more significant than in the misery of the psychiatric hospital.

ADDITIONAL HOSPITAL BUILDINGS

Building	Approximate Square Foot Area for Each Building
1. Administration	33,000
2. Dining Hall & Kitchen	38,500
3. Personnel Quarters	
a. Professional staff	
b. Maintenance staff	
c. Ancillary medical staff	
4. Utilities	
a. Hospital garage	
b. Warehouse	
c. Shops	
d. Laundry	
e. Boiler house & emergency generating unit	
f. Incinerator	

In summary, the program here proposed has the following principal features: A suburban location for the hospital will be selected within 10 miles of the business district of a large community having ample resources in medical personnel. Hospital capacity will be established between 1000 and 1500 beds and no expansion above the latter figure will be contemplated. The site will range from 250 to 400 acres and will be readily accessible by public transportation from the neighboring city. A written criteria and equipment guide list for the project will be developed in collaboration with the medical authorities and within the overall limitation of appropriated funds. Ward buildings will be divided into two principal groups, one for the care of the acute patient and the other for the care and treatment of the chronic. A 240-bed clinical building will be provided in which psychiatric as well as non-psychiatric patients will be hospitalized for definitive medical and surgical attention. Six prototype bed-containing buildings are suggested, especially designed for modern psychiatric treatment of (1) patients with acute psychiatric disorders; (2) psychiatric and non-psychiatric patients suffering from general medical and surgical disabilities; (3) chronic, ambulant psychiatric patients in good physical health whose behavior is not remarkable; (4) a similar group of psychiatric patients whose behavior is highly disturbing even in the protected environment of the hospital; (5) a group of feeble psychiatric patients of any age whose chronic physical disabilities require chiefly nursing care; and lastly (6) a group of psychiatric patients with co-existing tuberculosis. Auxiliary treatment buildings will include the following structures: gymnasium and swimming pool; occupational therapy shops; recreation and library building; chapel and theater. An administrative building and a dining hall and kitchen will be required along with the customary hospital utilities.



NORTON PSYCHIATRIC CLINIC

Norton Memorial Infirmary, Louisville, Ky.

Thomas J. Nolan & Sons, Architects

WHILE in the photograph this building appears to be — and it is — an addition to an old general hospital building, it actually represents some of the most progressive thinking in mental hospitals, as witness these quotations from its presentation to the people of Louisville: "Advances in modern psychiatric treatment have made such strides in the last few decades that practically every type of treatable mental and emotional disorder can be handled in a general hospital . . . there is no better place to treat mental and emotional illnesses than in the modern general hospital, scientifically, structurally and esthetically planned to administer to the sick in mind as well as in body." The Norton Psychiatric Clinic even includes a floor for alcoholics, jointly sponsored by Alcoholics Anonymous and the Kentucky Distillers Association. The alcoholic, as well as all other patients, may profit from the integration of physical and psychosomatic medicine. Psychiatry has struggled for a long time for just this sort of recognition of the problems of its patients.

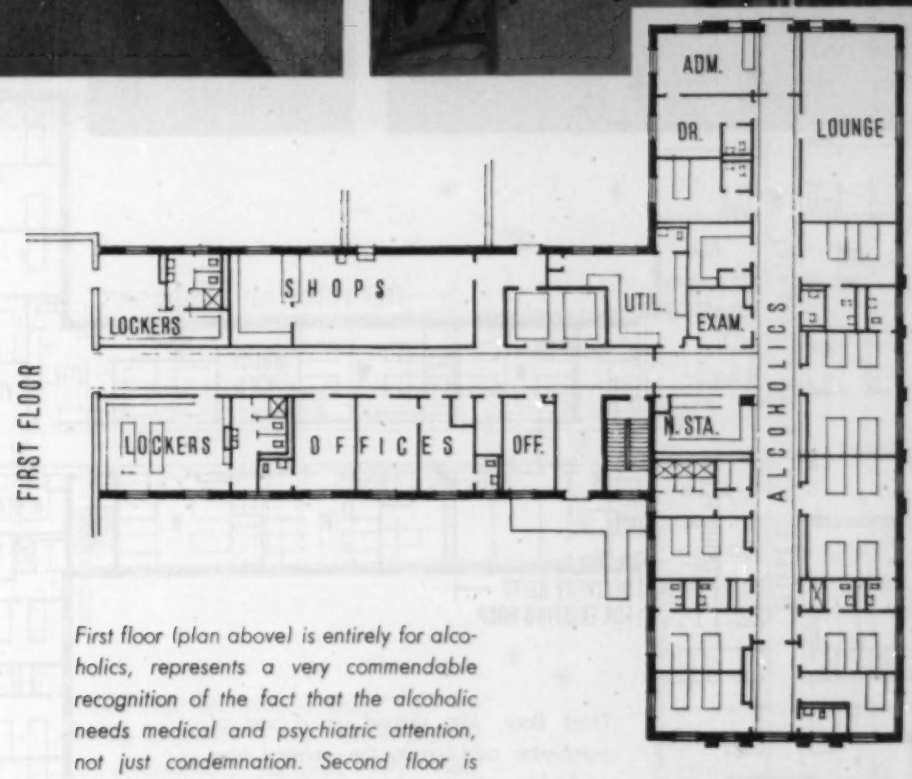
It is the first floor that is reserved for alcoholics; it has a separate entrance, as the department will control its own admissions. The patient's minimum stay is five days, though he may require longer treatment. If he is psychotic or too disturbed to be treated on this floor he is transferred to another.

The second and third floors do not have the typical facilities of the mental hospital, as these are intended for medical and surgical patients who require some study of psychosomatic factors involved in their illness. No day rooms have been provided, as these are short-term bed patients whose treatment will be continued in the outpatient department. These two floors represent the major contribution of the psychiatric clinic to the general hospital, for emotional disorders frequently come to light when the patient is hospitalized for medical or surgical attention. His psychosomatic treatment can be begun naturally and easily, with none of the terrors commonly associated with admission to a mental institution.

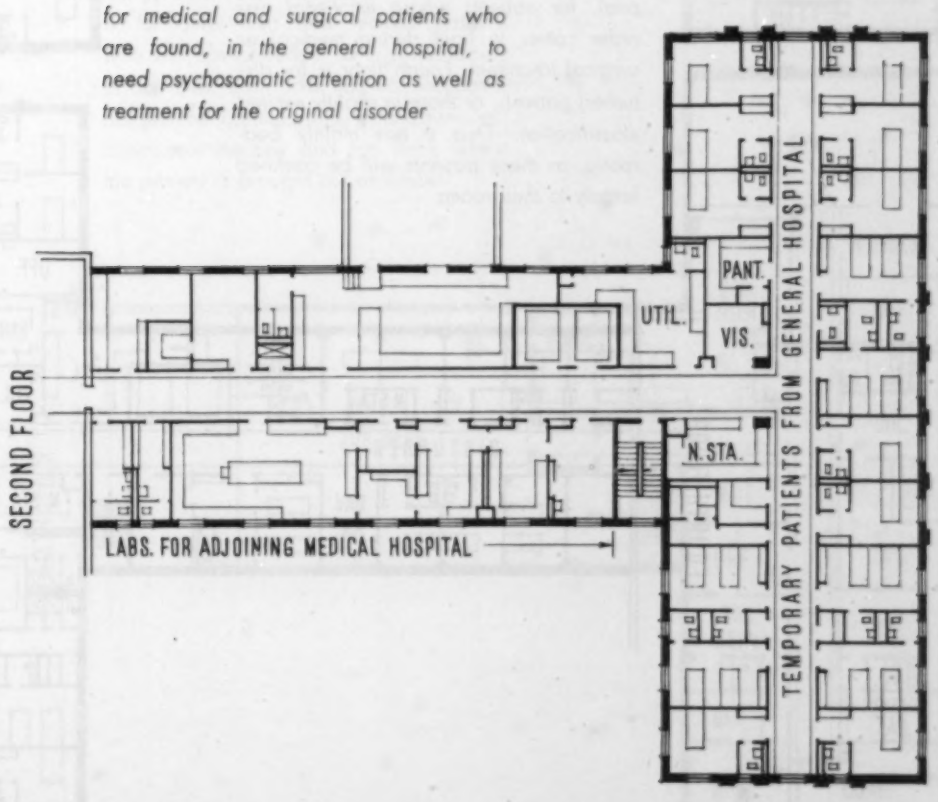
The fourth floor is more typical of the true mental hospital. It houses disturbed patients in the south wing or stem. The remainder of the floor is for slightly excited or semi-disturbed patients; segregation of sexes here is provided by rooms only.

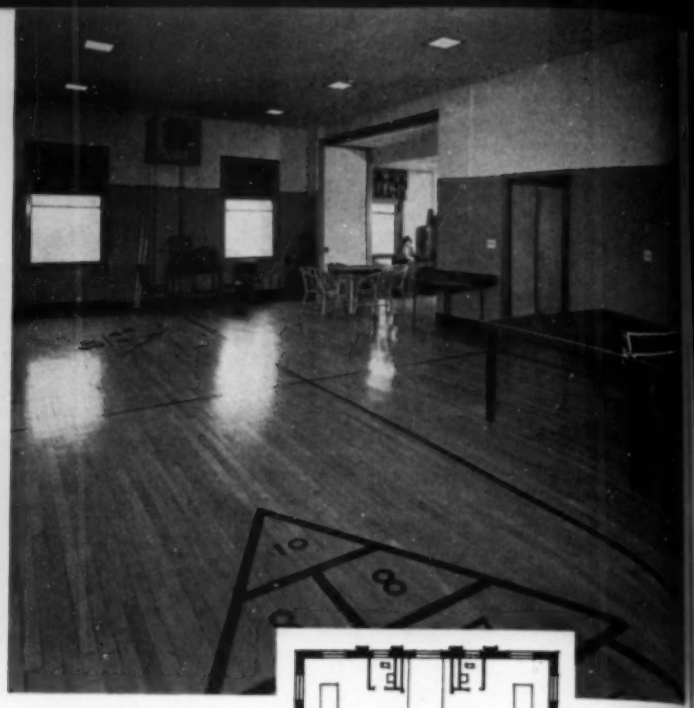
The fifth floor shows the increased freedom allowed to patients of quiet classification. Here too men and women are separated only in room allocation.

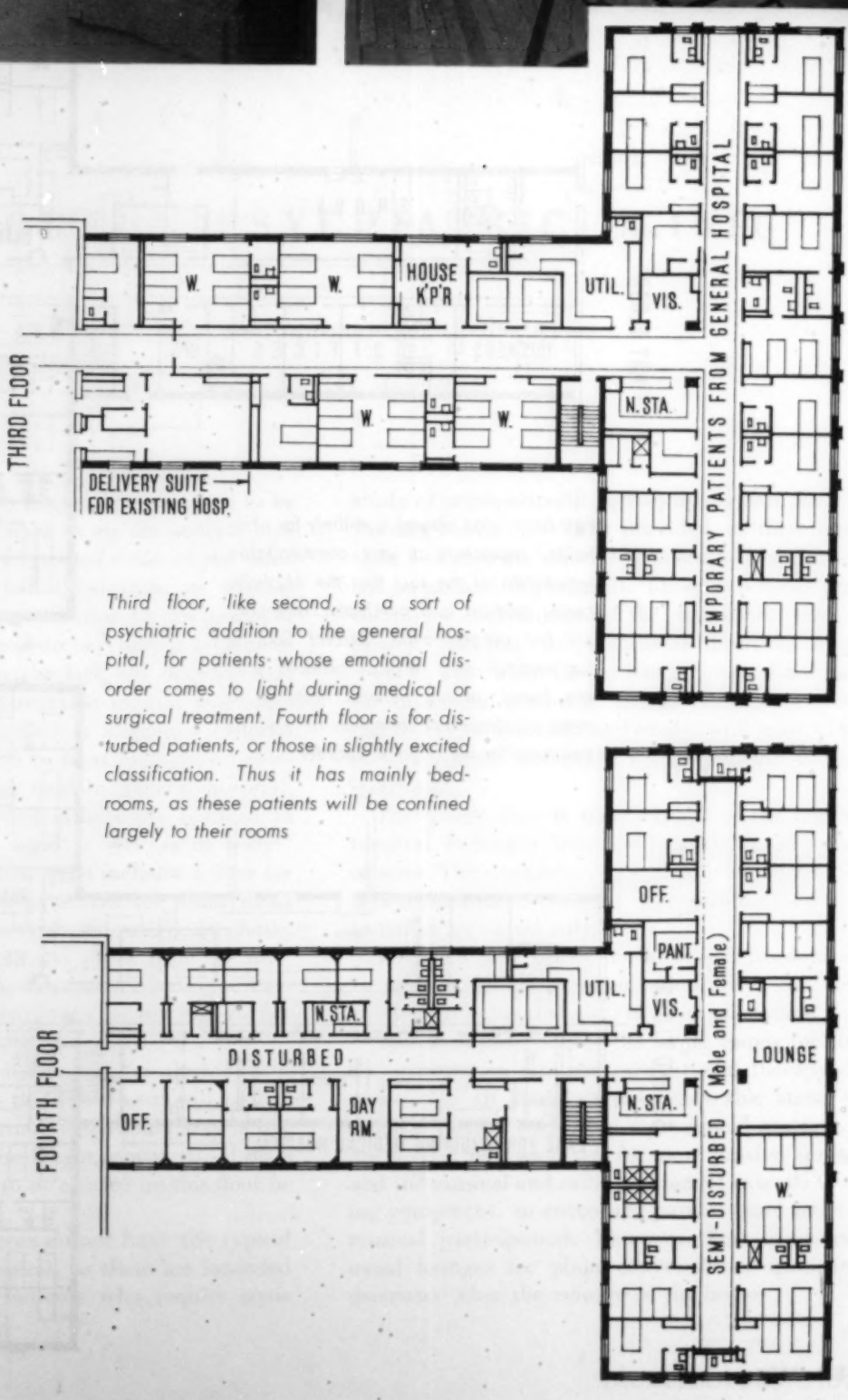
The sixth floor houses the larger rooms for therapy, the gymnasium and the occupational therapy department. But all floors show considerable stress on the reliance put on social and recreational matters. There are several television sets for more passive amusement, and the musical and radio equipment extends to recording equipment, to encourage patients into more active musical participation. There are too, of course, the usual lounges for plain conversation, furnished and decorated after the manner of the home.



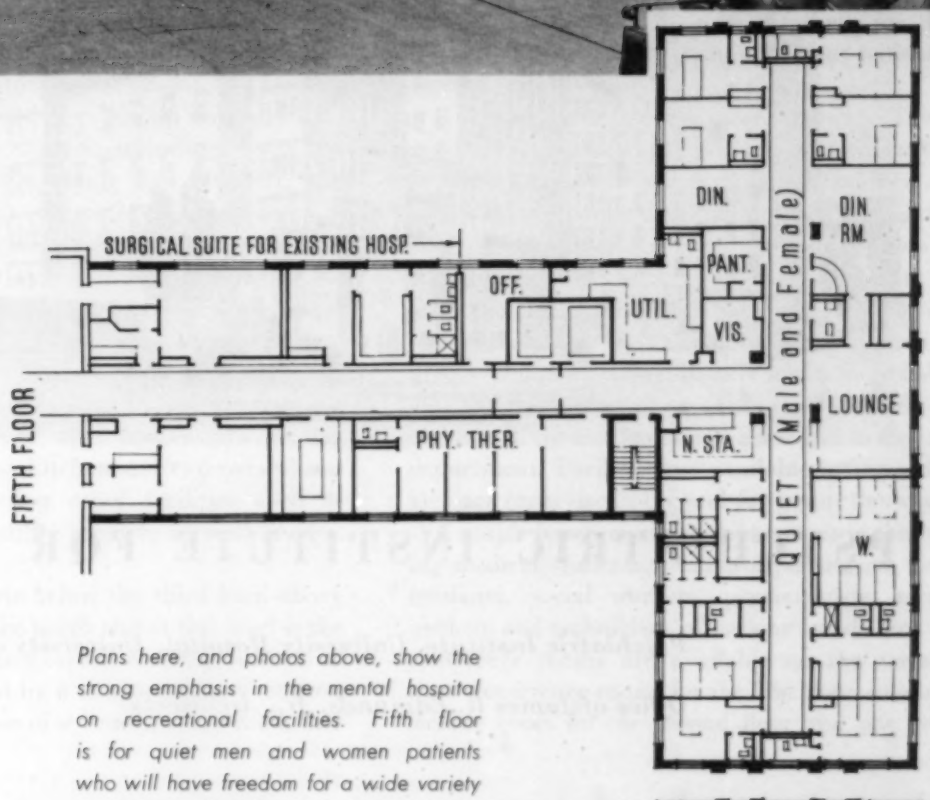
First floor (plan above) is entirely for alcoholics, represents a very commendable recognition of the fact that the alcoholic needs medical and psychiatric attention, not just condemnation. Second floor is for medical and surgical patients who are found, in the general hospital, to need psychosomatic attention as well as treatment for the original disorder



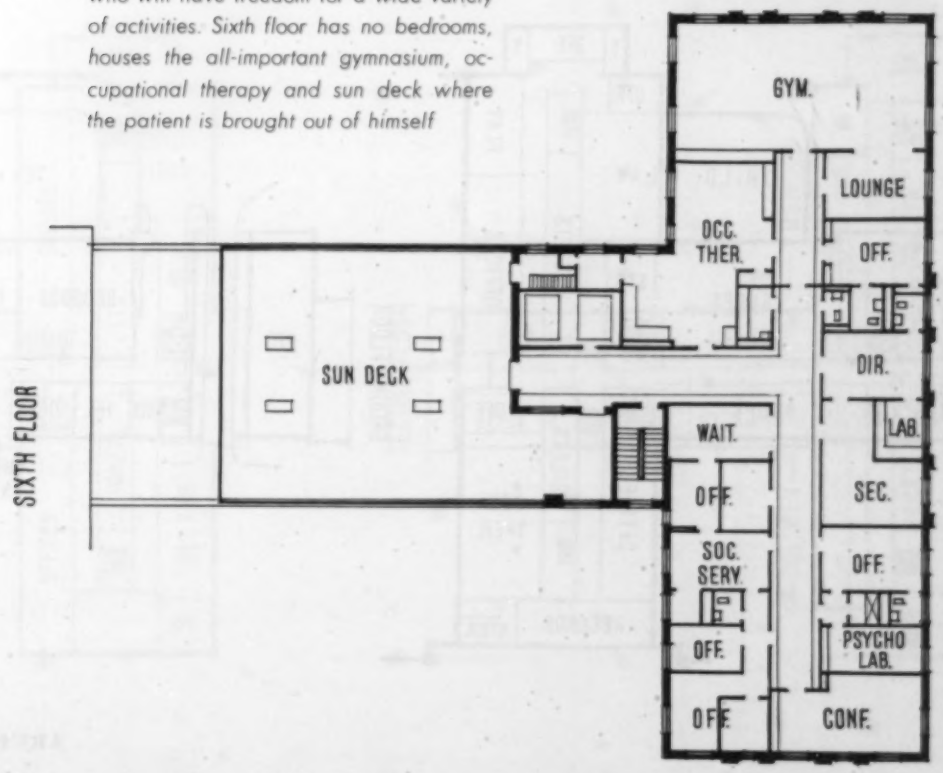




Third floor, like second, is a sort of psychiatric addition to the general hospital, for patients whose emotional disorder comes to light during medical or surgical treatment. Fourth floor is for disturbed patients, or those in slightly excited classification. Thus it has mainly bedrooms, as these patients will be confined largely to their rooms



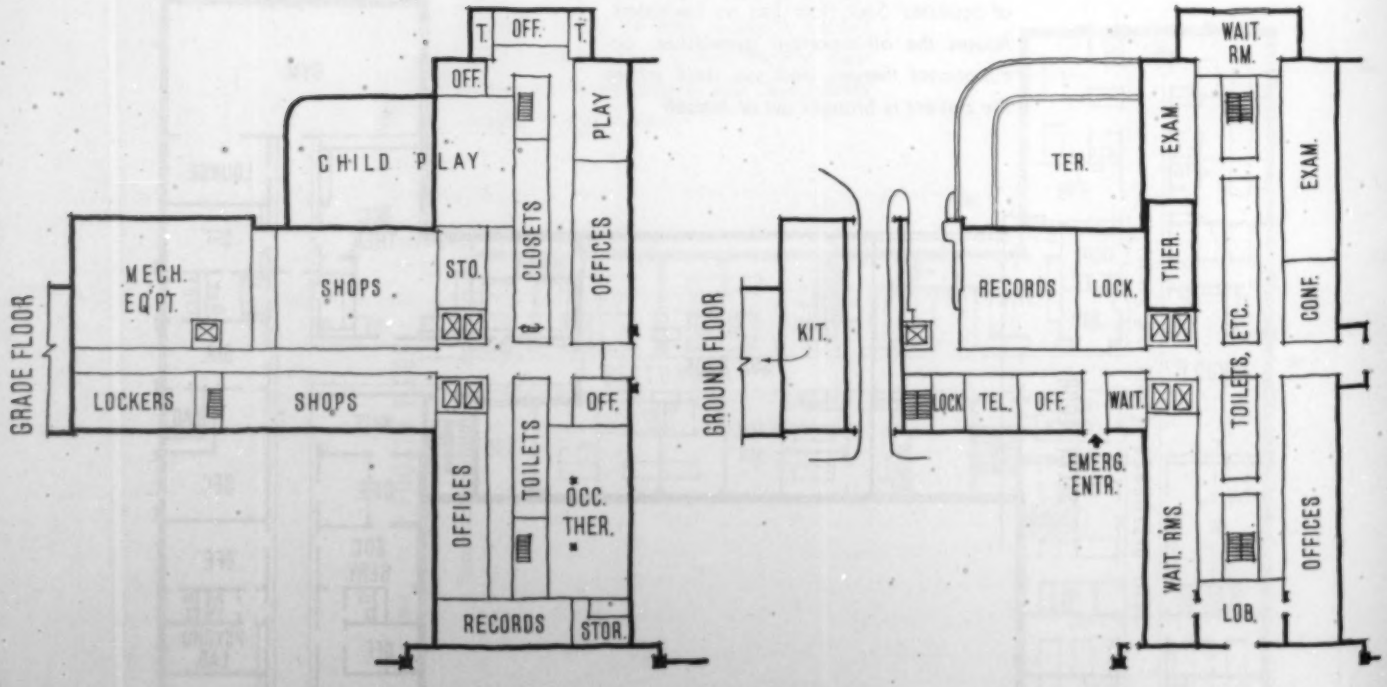
Plans here, and photos above, show the strong emphasis in the mental hospital on recreational facilities. Fifth floor is for quiet men and women patients who will have freedom for a wide variety of activities. Sixth floor has no bedrooms, houses the all-important gymnasium, occupational therapy and sun deck where the patient is brought out of himself



PSYCHIATRIC INSTITUTE FOR TEACHING

Psychiatric Institute, University Hospital, University of Maryland, Baltimore

Office of James R. Edmunds, Jr., Architects



This projected psychiatric hospital is designed to add a teaching unit to the existing university hospital. Thus it advances the psychiatric program of a state that is taking its problems of mental illness quite seriously and building several new hospitals. Since it is designed for teaching, it differs in important respects from other projects included in this study. In general the differences lie in extra rooms for class work, extra facilities for observation, a larger than usual outpatient department and a clinic for child guidance.

While the building is projected to later be expanded to the tenth story, it is presently designed to consist of one story partly in the ground, five full stories and a partial 6th and 7th above grade. These are designated to conform with those of the existing hospital. The grade conditions are such that the first floor in the new unit is actually one full story above grade. The problem was to house as in-patients an optimum number of the various categories required for teaching purposes. These consisted of men, women (white and colored), and children, in all treatment categories.

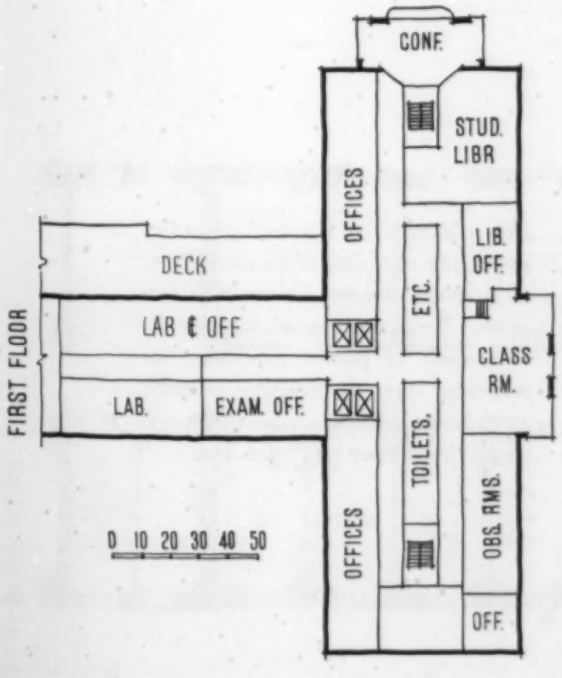
These are divided into six nursing units. The arrangement of patient areas into nursing units determined the shape of the building. The double corridor scheme was adopted to conserve light and good exposure for patient areas, and more especially to provide a compact nursing unit of the capacity required within the length available on the site. Each patients' floor houses two nursing units with a common floor kitchen and two nurses' stations connected, permitting other facilities such as nurses' toilet and clean utility room to be used in common by both units.

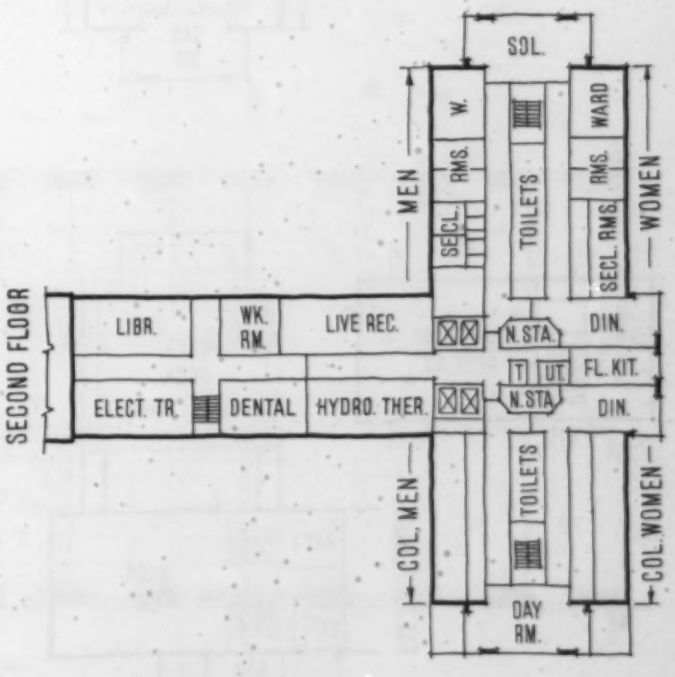
There are no in-patients below the third level above grade (second floor). In the north end at this level is the ten-bed disturbed unit, men on one corridor, women on the other, both controlled by a common nurses' station and both enjoying the use of a common day room and dining lounge when the condition of the patients so warrants. Treatment facilities other than shock are provided within the unit.

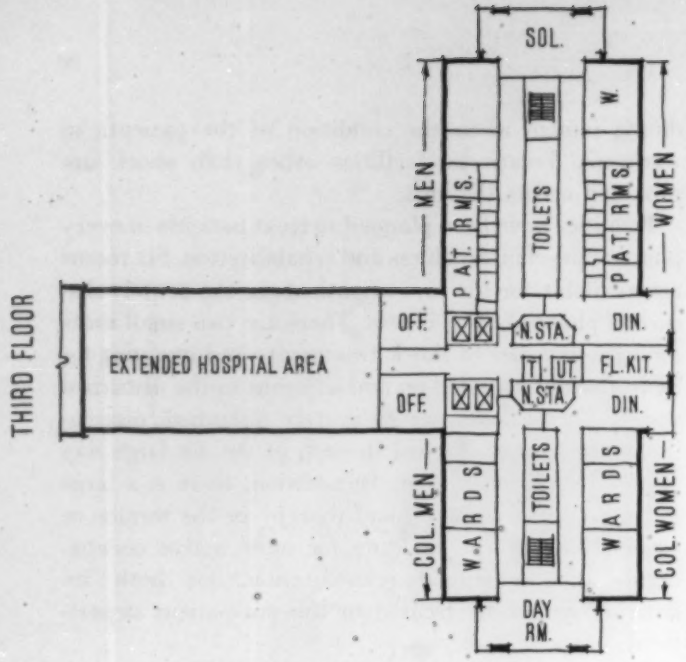
Facilities have been planned to treat patients in every phase of psychiatric illness and rehabilitation. Six rooms are available for the care of patients in the acutely disturbed phase of their illness. There are two small units for various types of shock treatments and one unit for hydrotherapy situated on and adjacent to the disturbed wards. For patients not so acutely disturbed, occupational therapy is planned in each of the six large day rooms, two on each floor. In addition, there is a large central unit for occupational therapy in the terrace or ground floor of the building for more active occupational and vocational rehabilitation, for both in-patients and those treated in the out-patient department.

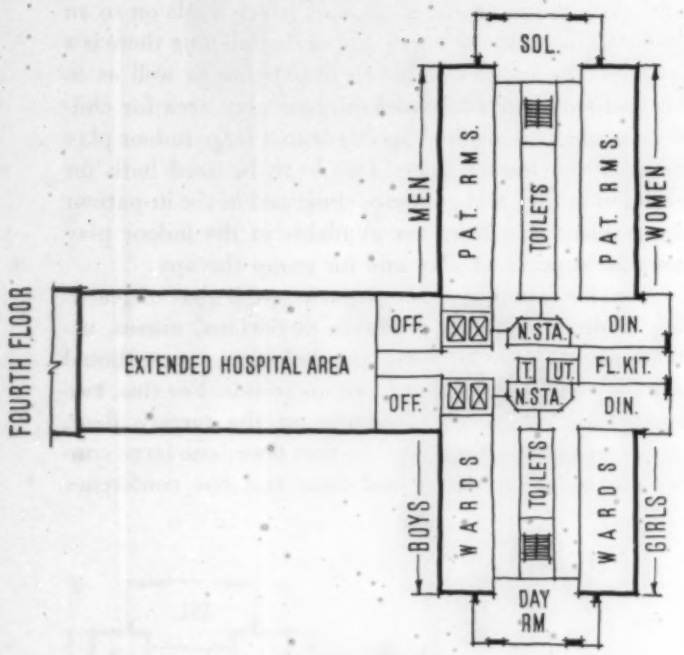
The day rooms serve several functions. They can be used for group therapy, occupational therapy and for recreation. In addition, recreational facilities are available for both adults and children in a large auditorium and gymnasium on the sixth floor which leads on to an enclosed roof. On the north side of the building there is a large playground available to in-patients as well as to out-patients. An additional outdoor play area for children is planned leading directly into a large indoor play area on the terrace floor. This is to be used both for children in the child guidance clinic and in the in-patient department. Facilities are available in the indoor play area for supervised play and for group therapy.

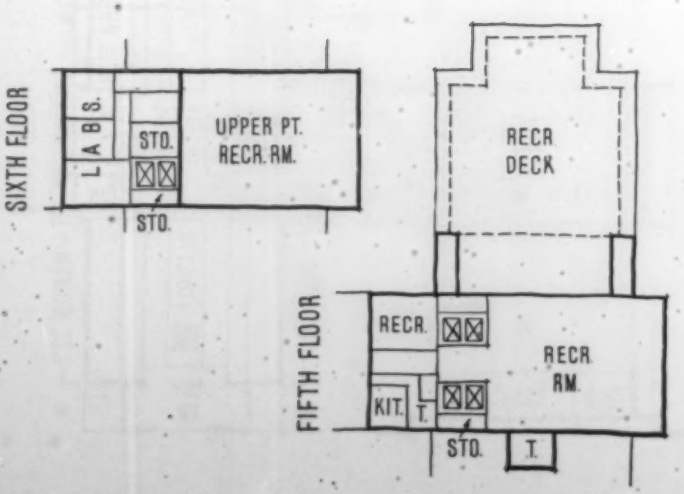
A major function of the department is that of teaching medical students, graduate physicians, nurses, attendants, social workers, psychologists, recreational workers and technicians of various trends. For this, two conference rooms are available on the terrace floor, three conference rooms on the first floor, one large conference room on the second floor and one conference









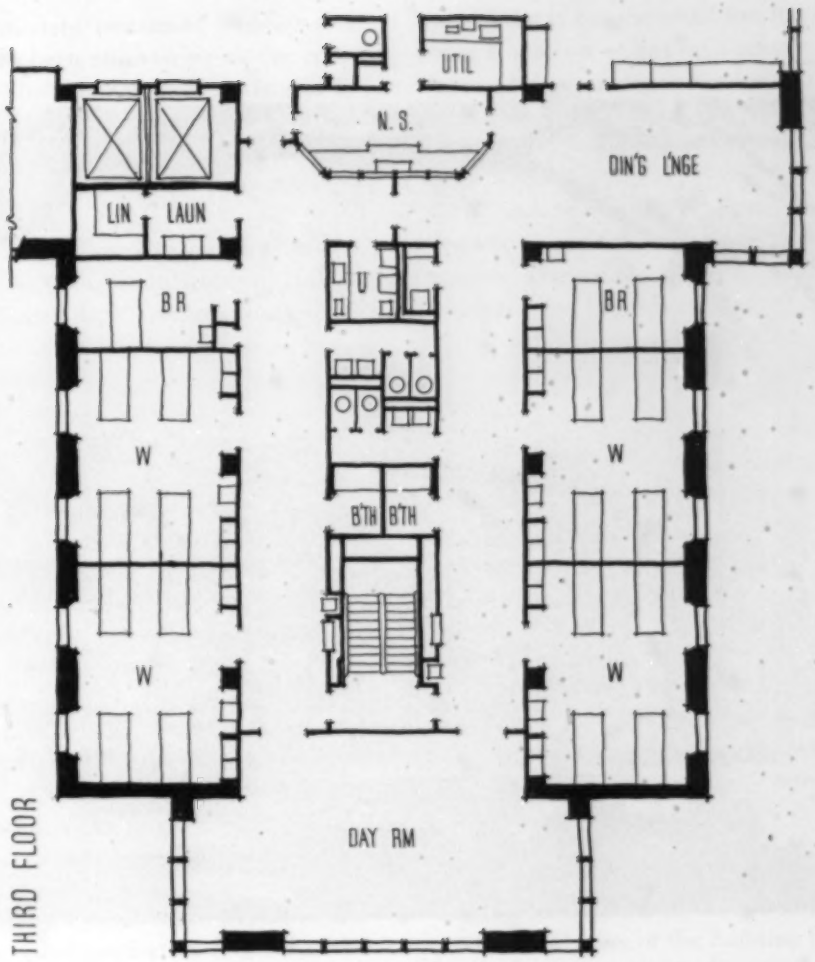


room in each of the wards of the building. A large lecture hall with 100 seats, equipped with a projection room for sound films is on the second floor. A large study library is on the same floor with indented cubicles for undergraduate and more advanced students. The large recreational area on the sixth floor can be used for lectures and movies for various groups of patients, patients' relatives and students.

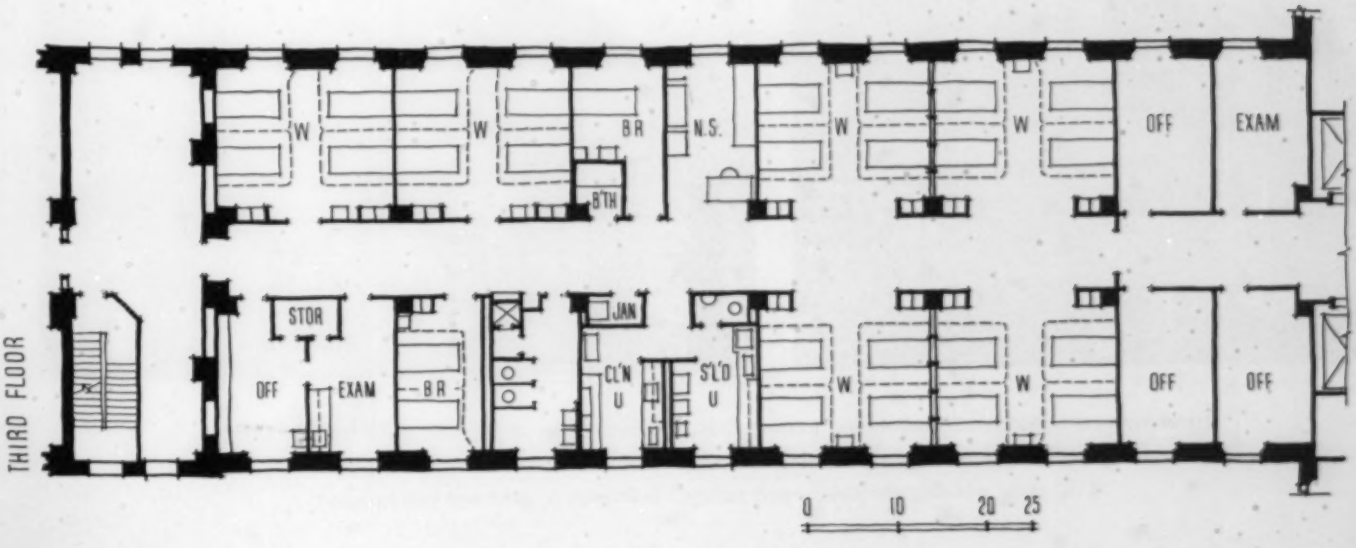
In psychiatric teaching great stress is laid on the teaching of various therapeutic techniques, interviewing and the development of special skills and techniques of behavior. For this purpose a unit has been developed that consists of an observation room located between two treatment rooms. Each of these rooms has a one-way mirror permitting students to observe interviews and treatment. Each treatment room has a microphone through which the interviews can be broadcast directly into the observation room, and recordings can be made of interviews, group treatment and conferences. One of these units is on the terrace floor for the observation and recording of play therapy; there is one on the first floor and two on the second floor. Each of sixteen offices has microphone outlets connected to a central receiving station on the first floor, so that any physician or student can make recordings for purpose of study. There is a library for recordings on the second floor near the larger library, where students can listen to recorded interviews. These facilities make available ample material for teaching and research.

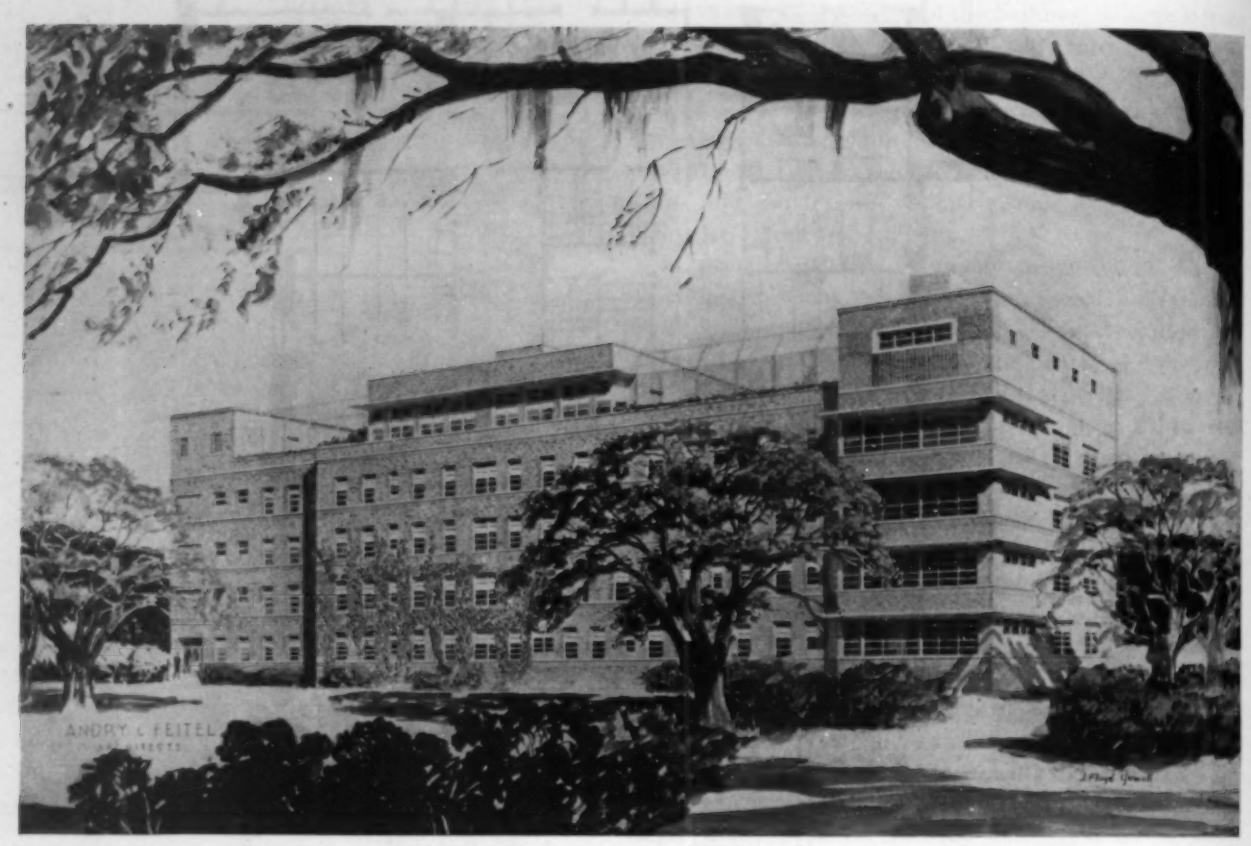
The architect acknowledges the assistance in programming and planning of: Alston G. Gutterson, architect, Division of Hospital Facilities, U. S. Public Health Service; Dr. Maurice Pincoffs, medical director, University of Maryland; Dr. Jacob E. Finesinger, chief of psychiatry, University of Maryland; and George H. Buck, director, University Hospital.

Plan diagrams on this and preceding pages give some idea of the complexities of a mental hospital for teaching purposes. There are special facilities for observation of patient interviews, for recording them as teaching material, extra library facilities, and a large out-patient department and child clinic



Partial plan of third floor (above) shows typical use of double corridor scheme, men on one corridor, women on the other, with the day room as meeting ground. Same nurses' station serves both corridors. Double corridor scheme also puts more beds into a length determined by the confines of the site. Below, single corridor scheme is used in stem portion of the T plan





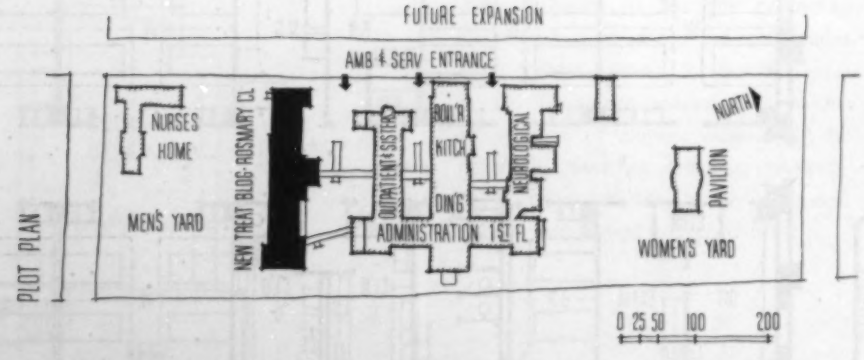
ROSARY CLINIC, DE PAUL SANITARIUM

Daughters of Charity of St. Vincent de Paul, New Orleans, La.

Andry & Feitel, Architects

Percy C. Kuhn, Structural Engineer

James M. Todd & Associates, Mechanical Engineers



ROSARY CLINIC adds a modern treatment building to a sanitarium which has been ministering to the emotionally ill since 1876. The original building is still in service, though it has been added to and remodeled many times. The new building is the latest effort to keep abreast of the load, also of the newer techniques of treatment.

Actually the clinic is not affected as much as might be supposed by its relation to an old institution. It does have one floor for "continued care" patients, but otherwise it is designed principally for treatment of patients who are expected to respond and so avoid the continued treatment category. Thus as a plan type it is not too far from the "receiving building" of a state hospital, though on a smaller scale.

As such it has the features most common to psychiatric treatment buildings. The recreation floor (fifth) is notable in this respect, with separate indoor recreation rooms for men and women, and separate large roof terraces. The rooms may be thrown together (accordion partition) for those occasions when it is fitting, and therapeutic, for men and women to meet together. There is a corrective gymnasium available to either men or women, a snack bar as an example of the freedom of normal living, and, as a further example of the same sort, a small laundry where women patients may do for themselves to an extent.

A nice feature of the outdoor roof terraces is the screening of greenery at the edges. While of course the terraces must have the usual protective screening, the course of planting at the edges softens the feeling of being protectively screened from a hazard of height.

The first floor is intended principally for male convalescents. It has the usual treatment facilities — hydro room and so on — but on a smaller scale than on other floors. It suggests more freedom for patients in visitors' room and day rooms. Also it doesn't have the isolation facilities of a disturbed section, and does have more of the beds in wards.

The second and third floors are virtually identical (shown as typical floor plan), one for men, one for women. These two floors combine the facilities and bedrooms for the more acutely ill. Each has its disturbed section, where rooms are air-conditioned and soundproofed, and stripped of every possibility for self injury.

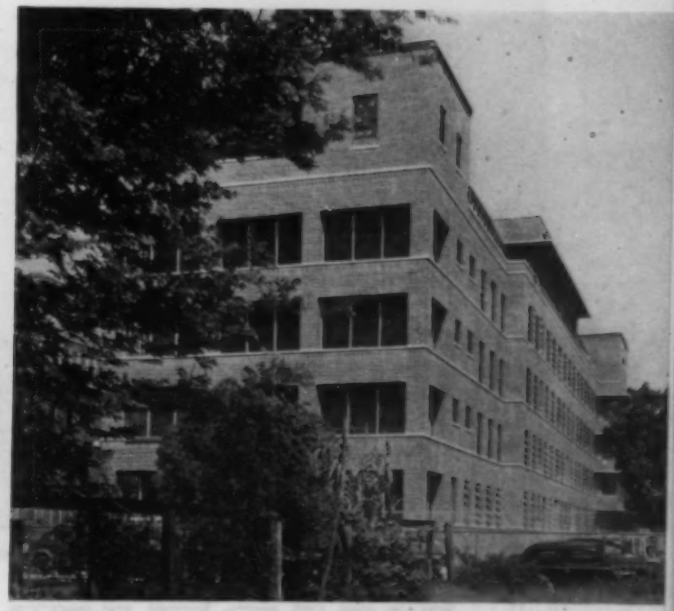
On all floors care has been taken in planning to keep certain services out of the patients' corridors — janitor's closet, stretcher alcove, and so on — to minimize the disturbance of various service traffic. Moreover, visitors need not enter the patients' corridor.

Communication facilities include the piping of musical programs to day rooms and dining rooms on each floor, and to the recreation rooms on the top floor. Each bed is equipped with a two-way communication device, so that the nurses' station may hear what is going on in any room, even to the breathing of the patient.

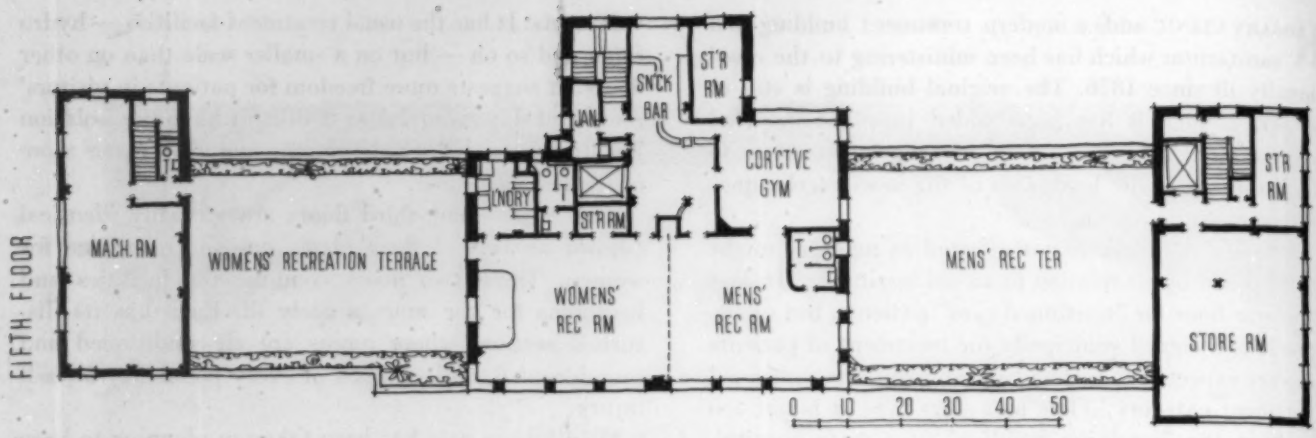
In the disturbed sections, each room has an emergency call-for-help device. Before the nurse enters the room she may activate a disk on the disturbed room wall. Then by pressing or leaning on the disk she may send a call for help to all nurses' stations.

The orientation of the building puts virtually all bedrooms on the south side. This is also the side away from the street, to protect neighboring property against the unpleasant noises always to be expected.

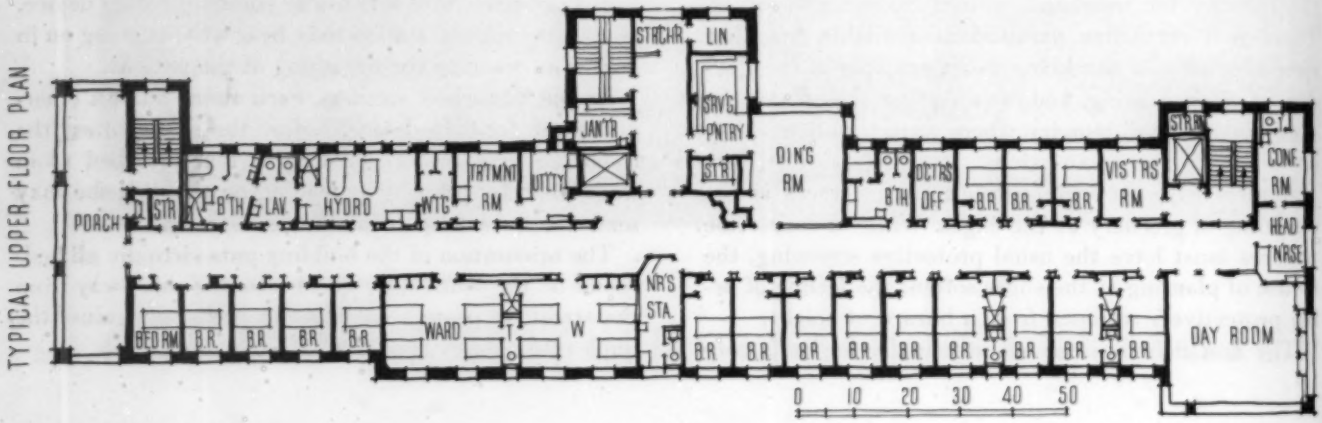
Chas. L. Frank Photos



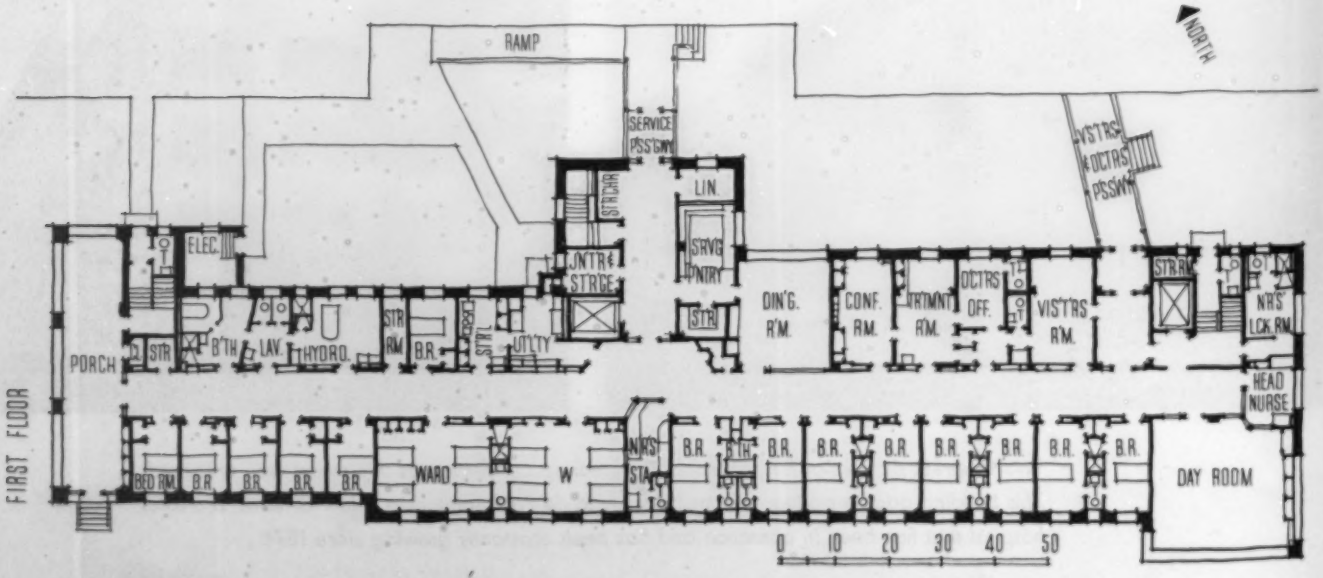
Two progress pictures of Rosary Clinic, just nearing completion as this report was prepared. This building adds a modern treatment facility to de Paul Sanitarium, New Orleans, a mental hospital that has been in operation and has been constantly growing since 1876

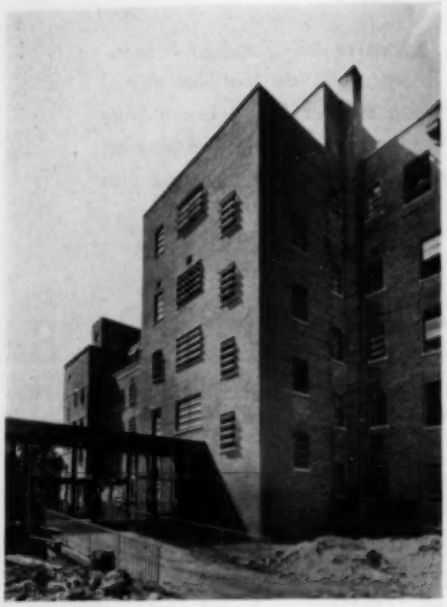


Whole top floor is devoted to indoor and outdoor recreational areas, where patients take their most important steps—readjusting to normal pursuits of life and to social contacts; rooms may be thrown together

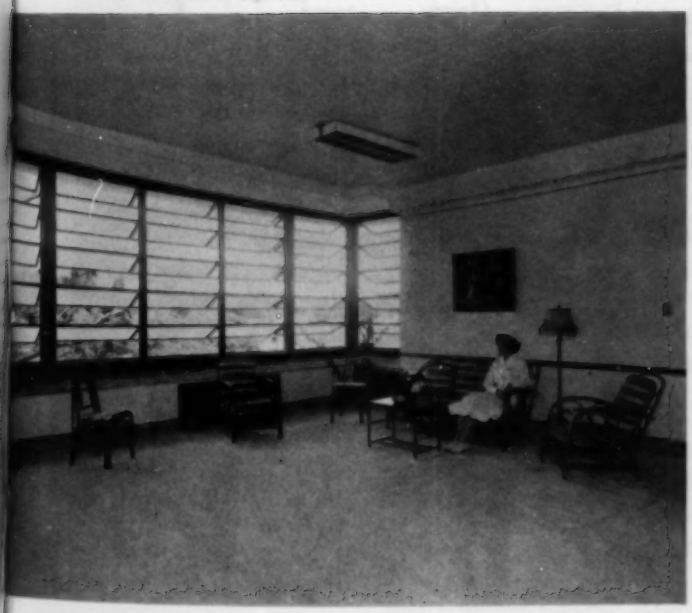


Second and third floors (above) are virtually identical, with facilities and bedrooms for the acutely ill. First floor, below, is for male convalescent patients, has fewer treatment facilities, more rooms in wards



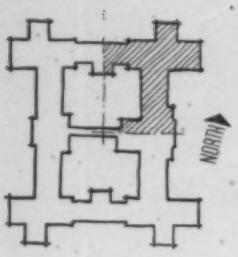


Chas. L. Frank Photos

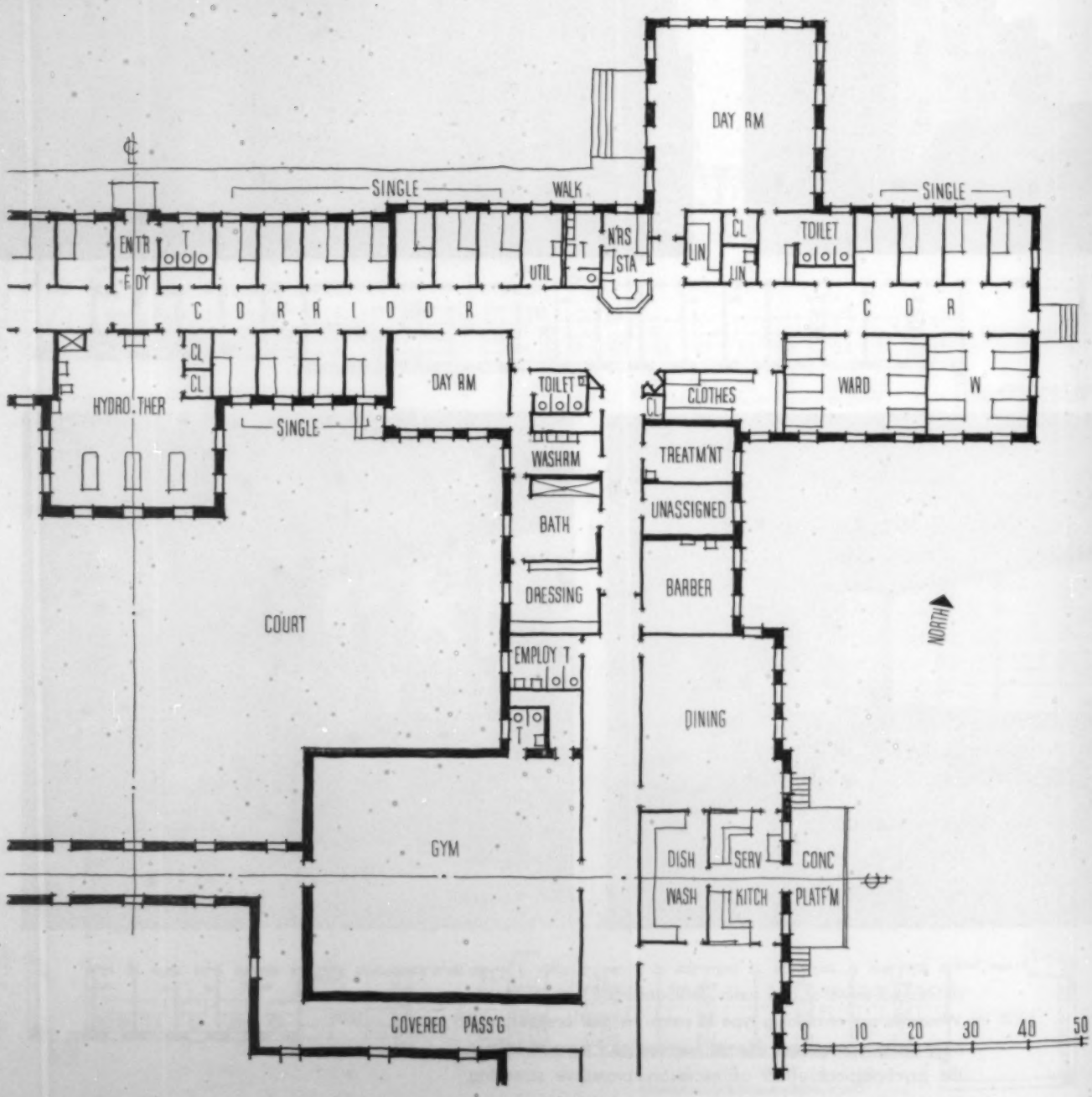


Unfinished views of day room (left) and roof terrace (right). Windows are of awning type to catch the gulf breezes, will have dentention screens. Planting around roof terraces softens the psychological effect of necessary protective screening

MARYLAND BUILDS MENTAL HOSPITALS



Plan shown here is one of four typical sections of the Disturbed Patients' Building at Springfield State Hospital; it is practically identical with that of another such building for Springfield and another for Spring Grove State Hospital, all done by the same architect. Nursing units are divided in this plan into small groups; nurses' station may observe patients in four directions, also two of the other nurses' stations at adjoining corners of the building



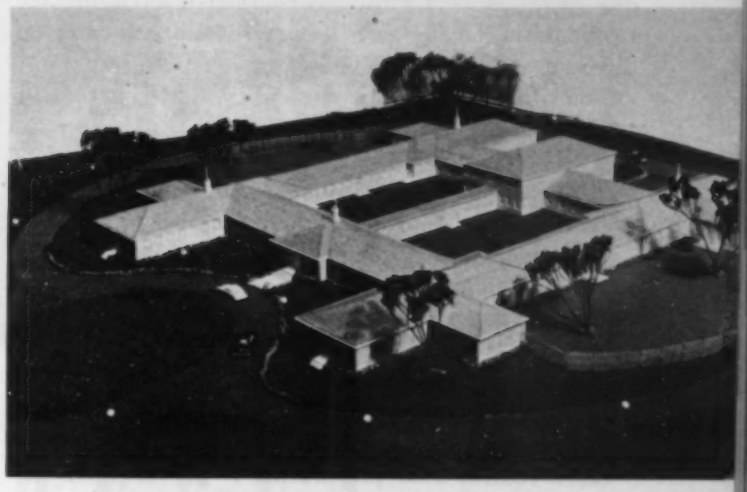
Disturbed Patients' Building, Springfield State Hospital, Maryland

Henry Powell Hopkins, Architect

Van R. P. Saxe, Structural Engineer

James Posey & Associates, Mechanical Engineers

Text prepared by John B. Funk
Chief Engineer of Maryland



BEFORE beginning the actual design of patients' buildings for the mental hospitals of Maryland, it was found highly desirable to secure the assistance of recognized experts in this field. Accordingly, a group of outstanding consultants was retained including Alston G. Gutterson, architect, United States Public Health Service, Washington, D. C.; Dr. Samuel W. Hamilton, superintendent, Essex County Overbrook Hospital, Cedar Grove, New Jersey; Dr. Winfred Overholser, superintendent, St. Elizabeth's Hospital, Washington, D. C.; Dr. Paul Haun, director of mental hospital planning, Veterans Administration, Washington, D. C.; Dr. Harry C. Storrs, superintendent, Letchworth Village, Thiells, New York; Dr. Frank F. Tallman, director of mental hygiene, Sacramento, California; Dr. Clifton T. Perkins, commissioner of mental health of Massachusetts and his staff. Incidentally, Dr. Perkins became Commissioner of Mental Hygiene of Maryland on April 3, 1950.

This group and the hospital superintendents of each of our five hospitals made a thorough study of the requirements for patients' buildings and assisted in the preparation of a preliminary program for our hospital buildings. Considerable discussion and comment attended the preparation of the program and each submission of preliminary plans. Comments were obtained both by conferences and by submission of preliminary plans to the various consultants.

At the preliminary planning stage, the question of relative cost of one-story construction as compared with two or more story construction was carefully considered. Preliminary plans were developed for one-story construction and the cost compared with a building of two or three stories, including the same facilities. A highly skilled estimator was retained to give a breakdown of the comparative cost. As a result of these estimates, it was found that one-story buildings could be constructed as economically as two- or three-story buildings. The additional cost of excavation, foundations, roofs, etc. in one-story construction was off-set by the cost of stairways, elevators, security screens and the adaptation of the second and third floors to the floor plan requirements of the first floor.

As a result of these estimates, a decision was reached to construct our disturbed patients' buildings and admission buildings of one-story construction, since there were many desirable features in one-story construction which our consultants considered very important. Some of these considerations were the elimination of stairways with their hazards due to patients being injured by the pushing and shoving of other patients and the unlimited access of patients to outside recreation areas. In addition, it was considered that one-story construction would lend itself more easily to future alterations as thinking in the field of mental hospital planning changed in the future.

Building for Disturbed Mental Patients

Two buildings for disturbed patients are being built at Springfield State Hospital and one identical building at Spring Grove State Hospital. One of the buildings at Springfield State Hospital is a 100-bed unit for male patients, the other being a 100-bed unit for female patients. The building at Spring Grove State Hospital is a 100-bed unit for female patients.

Each of these three buildings is of one-story fire-resistant construction and covers an area of 316 ft by 292 ft. The building is divided into four nursing units of twenty-five beds each. Each nursing unit includes 15 single rooms, one 6-bed ward, one 4-bed ward, and two day rooms, as well as nurses' station, two toilets, wash-room, bath, dressing room, clothes room, utility, janitor's closet, temporary soiled linen closet, etc. Careful attention was given to the location of the nurses' station in order that one nurse may observe patients in four directions and may also observe the nurses at other stations if that is considered desirable.

The large day room in each ward directly opens into an exercise yard which is fenced in, while the smaller room opens into an inside court. The provision for two day rooms in each ward was considered advisable due to the desire on the part of many patients to carry on different activities or to be in a more quiet area.

The two hydro-therapy units which house continuous tubs, pack tables, toilets and closets, are centrally located so that they can be conveniently used by two wards. This allows a minimum amount of nursing personnel to take care of a maximum number of patients.

A barber shop is included in the male disturbed patients' building and a beauty salon is provided in the two buildings which have been designed for female patients.

Multiple Dining Facilities

Since central food preparation is provided for the entire hospital, the kitchen is a serving kitchen only and provides for two cafeteria-type dining rooms. The use of two dining rooms was decided upon after considerable discussion, opinion being divided between the use of one large dining room, two dining rooms, or one dining room for each nursing unit. The decision for two dining rooms was prompted by the desire to allow some classification of dining room patients, so that those patients who are less troublesome might be given a more quiet facility. Since one serving kitchen and dishwashing facility could serve both dining rooms, the arrangement was satisfactory from the standpoint of efficiency and economy. While the feeding of ambulatory patients will be carried out by a cafeteria system, all patients may not be able to go to the cafeteria and some may, therefore, be tray fed.

An important feature of this building is a gymnasium which is accessible to all of the four nursing units. It was considered highly desirable that a gymnasium be included, since many patients greatly benefit from the vigorous exercise which is provided here. All of our consultants considered this a most desirable facility.

Ample provision is made for occupational therapy by providing two large rooms with storage closets and toilet facilities for this purpose.

At the front entrance to the building, a reception hall is provided with toilet facilities and six rooms for the use of visitors who may come to see the patients. In this area facilities are provided for shock and other type treatment, as well as doctor's offices, supervisory nurse's office, and examination rooms. Treatment facilities are also provided in each of the four wards.

Construction Details

The structural walls of the building are four-inch brick veneer on cinder block, damp proofed on the inside with a troweled asphalt damp proofing applied to the interior of the cinder block wall. The interior of the building is veneered with furring tile. This interior furring tile is a glazed colored tile, carried in general to a height of approximately 5 ft 4 in., above which the walls are plastered on cinder block tile to the ceiling and painted. In all rooms such as baths, toilet rooms, janitors' closets, hydro-therapy rooms, kitchens, etc., the walls above the glazed tile are finished in buff brick.

The roof construction is steel framing with a gypsum plank, finished in slate. All windows are double-hung wood sash, and are protected on the interior with a metal combination insect and detention screen. This guard is hinged and locked.

The floors in general throughout the patients' area are terrazzo; elsewhere, asphalt tile on a concrete slab. All ceilings are fireproof acoustical tile. The entire roof area above the ceilings is insulated.

Radiant Plus Warm Air Heating

The mechanical work was given a great deal of thought and attention. The use of radiators has long since been given up, so it was decided to build an expressed roof over the entire building and house in this roof the heating and ventilating for the building, thereby using ordinary waste space for a very necessary utility.

Radiant heating is provided in the floors of all areas where patients are given a minimum amount of supervision, the amount of heat being only enough to keep the floors warm. Radiant heating generally is effected by means of steam being brought into the building and up into the attic spaces to converters, and the hot water circulated to and from the floor panels as temperature differences require.

The building is heated throughout by a system of fans and duct work which carries the tempered air to specific areas throughout the building, and supplements the radiant heat where such heating is used. The heated air is distributed into the room through a system of grilles. The exhaust is effected by a system of registers in the ceilings of the various rooms and is transmitted to the area above the ceiling and under the roof structure, which acts as a large exhaust duct. This system provides for the ventilation of the building in the summer through the introduction of outside air into the building through the heating system.

These buildings will be constructed at a cost of $1.25 per cubic foot including architect's fee, or approximately $10,000.00 per bed.

Panda photo

ARCHITECTURAL RECORD'S BUILDING TYPES STUDY NO. 167

SCHOOLS

IF one were to judge school design and construction on this continent solely by past studies published in this and other architectural periodicals, one might be justified in assuming that our architects did not have, generally speaking, too firm a grasp of cost and educational demands. We have all been exhorting our subscribers, tirelessly telling them to perform miracles for pittances — and here is how it must be done!

But a look at the actual school buildings recently built tells a different story. Each of the buildings presented here is a conscientious, forthright piece of work, an example of sincere effort to reconcile cost with demands and produce good architecture in the process. It is interesting that not one of these schools was designed by a firm well known by professional publication of its schools, although some have appeared in educational journals. Nor is there a single, perfect answer to the school problem; local and regional conditions do make themselves felt, as in the Oregon Creslane School, which is built of wood and burns waste sawdust to provide cheap heat.

Photo at top of page shows new one-story school, Bowmanville, Ontario, Canada, alongside old school it replaces; John B. Parkin Associates, Architects

We are particularly fortunate in being able to show a generous sampling of schools done by one of Colorado's most active firms. These may not give a complete picture of the state's school program (other architects are producing other solutions); their importance lies in the demonstration they provide of a degree of standardization achieved by one architectural office working in situations which, while geographically well scattered, nevertheless have many common characteristics.

In every instance, we have documented requirements, costs, construction, finish, and equipment, so that others may see at a glance at what expense this need was met with what materials. The examples range from the far Northwest to New England, in the case of the school shown in this month's Architectural Engineering pages. After much thought we have given some importance to cost per classroom, because the classroom is the ultimate teaching unit, particularly in elementary schools. The number of pupils fluctuates; square and cubic foot costs can be figured in a multitude of ways; classrooms are constants. Even so, we realize, direct comparisons may not be fair. A school with a gymnasium, auditorium, and extensive laboratories will have a much higher per-classroom cost than a simpler building, so the accompanying cost figures should be studied in relation to the type of non-classroom facility provided.

Remember, fellow architects: this time we're reporting, not exhorting. This is *your* work.

Frank G. Lopez

SEVEN COLORADO SCHOOLS

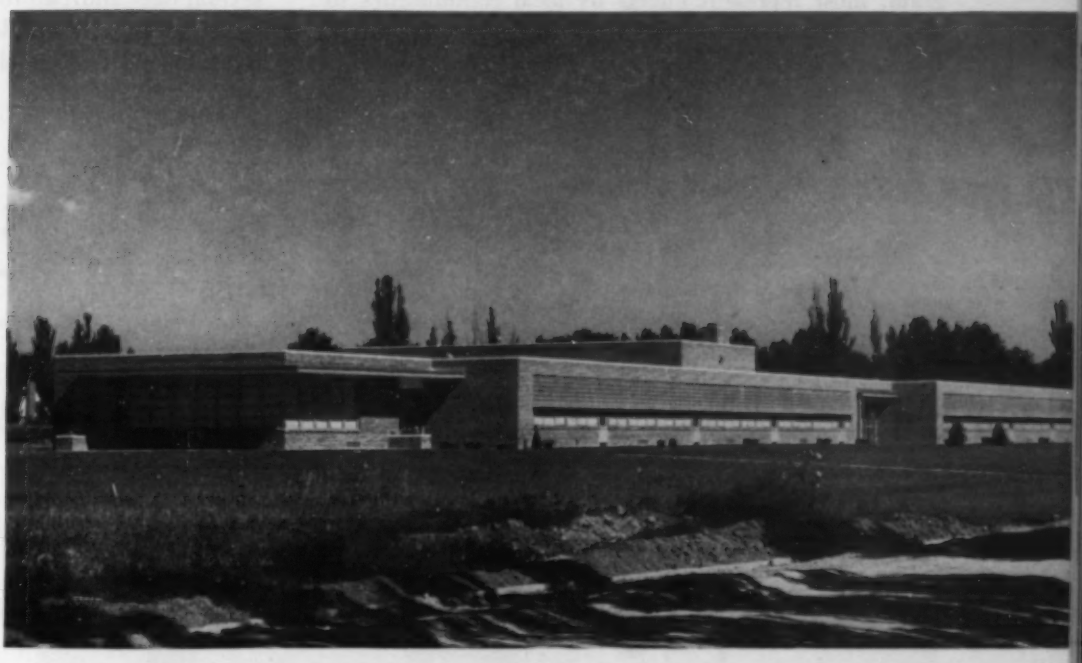
SCHOOL NAME, LOCATION	NO. PUPILS (Design Capacity)	BUILDING COSTS —No Fees —Complete	UNIT COSTS —Per Sq Ft —Per Classroom*	NUMBER OF ROOMS	DATE OF —Contract —Occupancy	STRUCTURE
A. H. DUNN ELEMENTARY SCHOOL, FT. COLLINS	480	$334,462 369,529	$12.26 30,794.08*	12 Classrooms, Cafeteria, Kitchen, Multi-purpose Room, Principal, Teachers, Kindergarten	Dec. 10, '48 Dec. 19, '49	Masonry bearing; concrete foundation, steel window wall framing, bar joists. Wood joists floor and roof in multi-purpose room
HIGH SCHOOL, AURORA	300	284,385 314,033	9.70 28,550.00*	10 Classrooms, Laboratory, Library, Administration Area, Gym, Teachers	July 2, '49 Sept. 1950	Masonry bearing. School portion: bar joists and slabs. Gym: Steel frame and purlins
N. LITTLETON ELEMENTARY SCHOOL, LITTLETON	420	242,000 275,000	9.59 22,916.66*	12 Classrooms, Cafeteria, Kitchen, Multi-purpose Room (future), Principal, Teachers, Kindergarten	Nov. 1, '48 Jan. 3, '50	Masonry bearing; steel window wall, wood roof and floor joists. Steel bar joist in toilets and cafeteria floor and roof
EACH OF 2 IDENTICAL ELEMENTARY SCHOOLS, ROCKY FORD	360	473,549 550,000	9.70 45,833.33*	12 Classrooms, Cafeteria, Kitchen, Multi-purpose Room, Principal, Teachers	June 22, '49 Fall, 1950	Masonry bearing; steel window wall framing, wood joists floor and roof. Bar joist in multi-purpose room
ORCHARD AVE. ELEMENTARY SCHOOL, GD. JUNCTION	240	180,152 215,000	10.12 35,833.33*	6 Classrooms, Lunchroom, Kitchen, Multi-purpose Room, Principal, Teachers, Kindergarten	Dec. 10, '47 Jan. 1, '49	Masonry bearing; concrete foundation, steel window wall framing, steel joists. Wood joists floor and roof in multi-purpose room
MOFFAT COUNTY HIGH SCHOOL, CRAIG	280	410,000 450,000	9.89 40,909.09*	8 Classrooms, 3 Laboratories, Auditorium, Gym, Shop Wing, Staff Rooms, Library, Band Room	June 7, '47 Sept. 1948	Masonry bearing; concrete foundation, steel arches and truss in gym and auditorium, wood joists floor and roof

* Based on complete cost, including fees, etc. Note that this figure, which is significant as being the cost per actual teaching unit, includes a share of costs for multi-purpose rooms, cafeterias, kitchens, etc.

A. H. DUNN ELEMENTARY SCHOOL

Fort Collins — COLORADO

Atchison & Kloverstrom, Architects



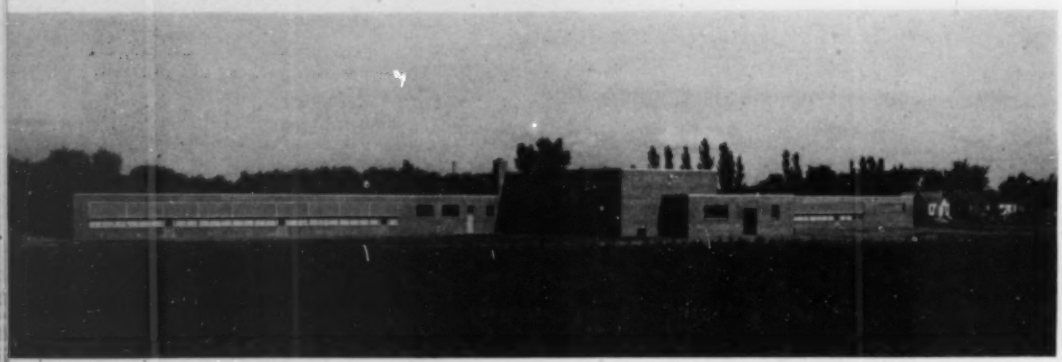
Marshall Brooks Photo

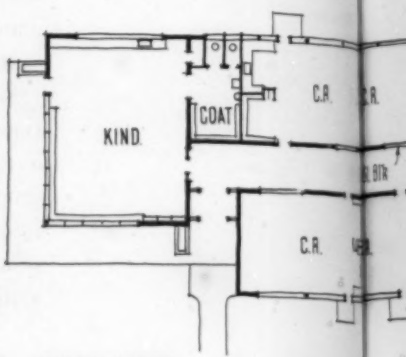
FOLLOW ONE BASIC PATTERN

EXTERIOR WALLS	ROOF	METAL WORK	INSULATION	WINDOWS	CORRIDORS	ROOM FLOORS	INTERIOR WALLS	CEILINGS	DOORS —Exterior —Interior	HEATING and VENTILATING
Brick, cinder block back-up, limestone coping and trim	20-yr pitch, gravel	Galvanized iron	1-in. board	Glass block, aluminum sash	Concrete slab, asphalt tile	Asphalt tile over fir	Glazed brick, plaster	Ordinary and acoustic plaster	Pine panel *Birch* veneer	Gas boiler, LP steam convectors, unit ventilators
Wire cut brick, brick and cinder block backing. Brick and limestone trim	20-yr pitch, gravel	Exterior, 16-oz copper; concealed, galvanized iron	1-in. glass fiber	Glass block, aluminum sash	Concrete slab, asphalt tile	Asphalt tile over concrete	Glazed brick, plaster	Vermiculite and smooth plaster	Red oak, stained and seeled	Gas boiler, radiators and univents
Brick, cinder block back-up, limestone coping	20-yr pitch, gravel	Galvanized iron	1-in. fiber (roof)	Glass block, aluminum sash	Concrete slab, asphalt tile	Asphalt tile over fir	Glazed brick, plaster	Ordinary and acoustic plaster	Pine panel *Birch* veneer	Gas boiler, convectors, unit ventilators
Brick, cinder block back-up, cement asbestos fascia, no parapets	20-yr pitch, gravel	Galvanized iron	1⅜-in. glass fiber	Glass block, aluminum sash	Concrete slab, asphalt tile	Asphalt tile over fir	Glazed brick, plaster	Ordinary and acoustic plaster	Solid pine *Birch* veneer	Gas boiler, radiators. M.P. Room: unit ventilators
Brick, cinder block back-up, limestone coping	20-yr pitch, gravel	Galvanized iron	1⅜-in.	Glass block, wood sash	Concrete slab, asphalt tile	Asphalt tile over wood	Glazed brick, plaster	Vermiculite and smooth plaster, insulating board	Pine painted *Birch* veneer	Coal boiler, stoker, unit ventilators, convectors, radiators
Brick, cinder block back-up, limestone coping	20-yr pitch, gravel	Galvanized iron	1-in. fiber board	Glass block, wood sash	Concrete slab, asphalt tile	Asphalt tile over fir	Glazed brick, plaster	Vermiculite plaster, acoustic tile, insulating board	Solid pine *Birch* veneer	Gas boiler, radiators

Lighting fixtures in all schools incandescent. Boiler rooms in all schools sunken.

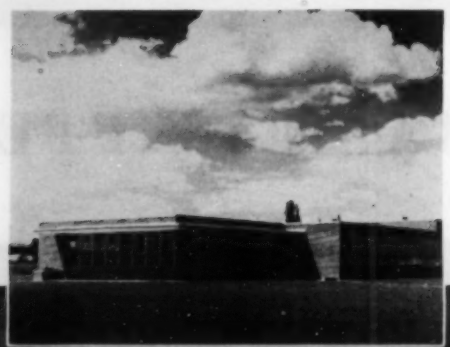
In this group of Colorado schools, all by the same architectural firm, a basic pattern in design is evident in arrangement and through use of similar materials; a certain pattern is common in construction; a basic pattern also prevails in financing, inasmuch as funds for all were raised by school district bond elections. None of the buildings is part of a statewide program; most represent efforts by local communities to upgrade educational facilities in their immediate areas. For example, the A. H. Dunn Elementary School at Fort Collins is one of two buildings authorized by a school bond election on March 23, 1948. (The second, a high school gymnasium to provide spectator seating of approximately 2500, etc., will be placed under contract this year.) Moffat County High School, on the other hand, represents a county rather than a local effort to provide adequate physical facilities; it replaces several one- and two-room units as well as a somewhat larger building. We understand that the state is endeavoring to effect a school district consolidation program.





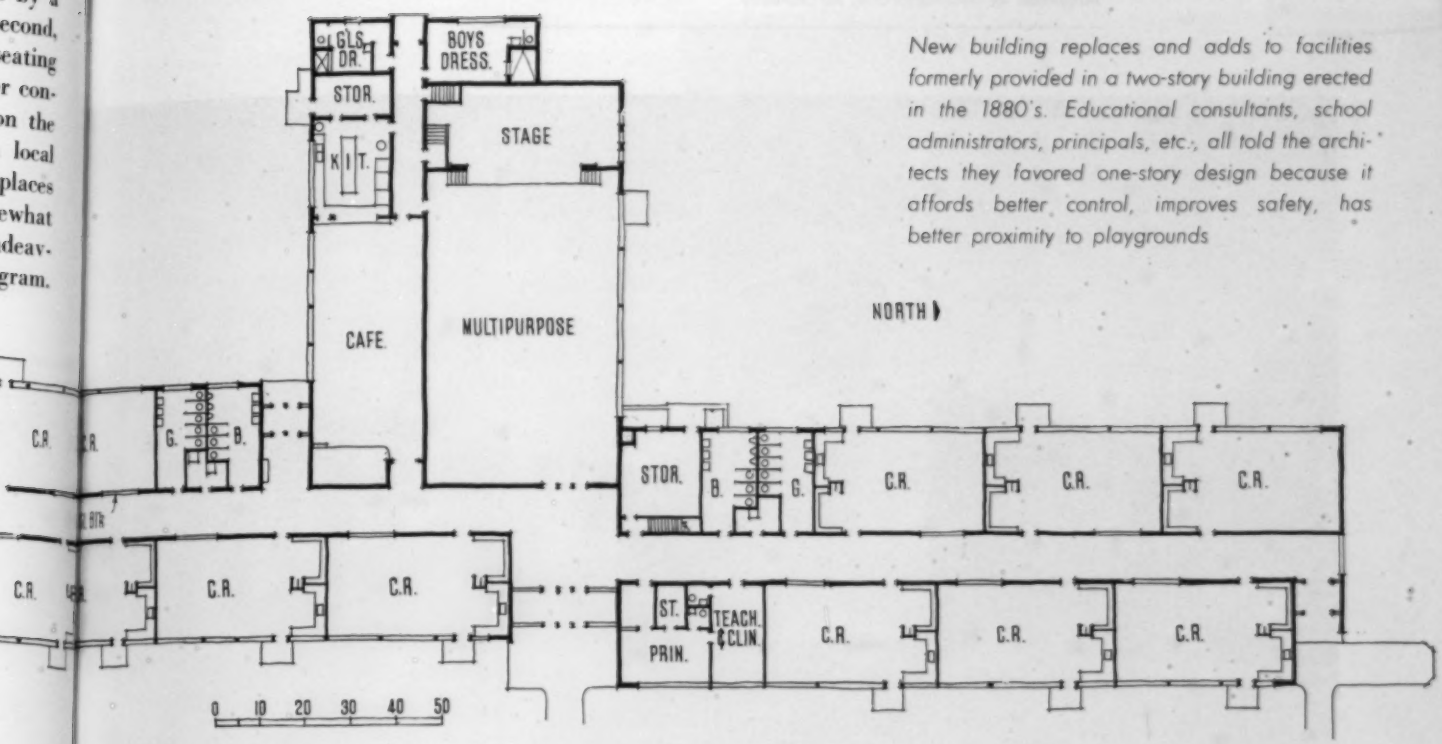
FIRST FLOOR

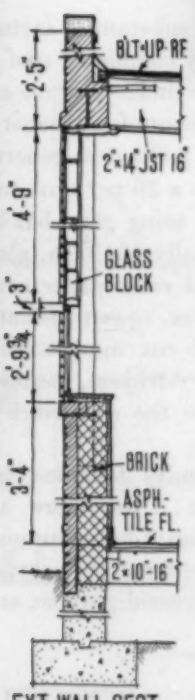
Marshall Brooks photos



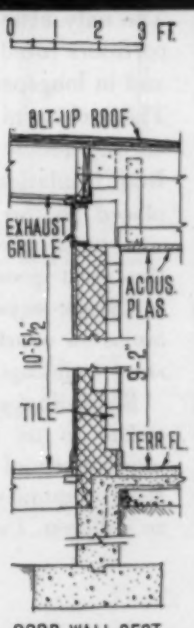
A. H. DUNN ELEMENTARY SCHOOL

New building replaces and adds to facilities formerly provided in a two-story building erected in the 1880's. Educational consultants, school administrators, principals, etc., all told the architects they favored one-story design because it affords better control, improves safety, has better proximity to playgrounds





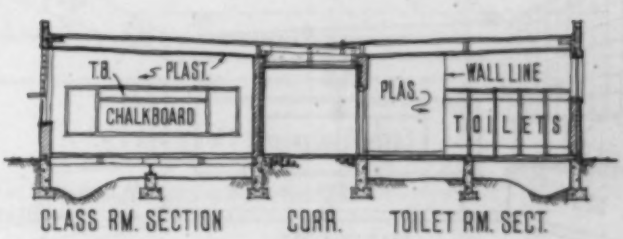
EXT. WALL SECT.



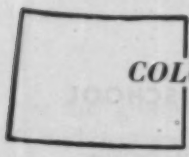
CORR. WALL SECT.

0 1 2 3 FT.

Construction is typical of all schools from this office: classrooms wood-floored, corridors, toilets, etc., concrete slab



CLASS RM. SECTION CORR. TOILET RM. SECT.



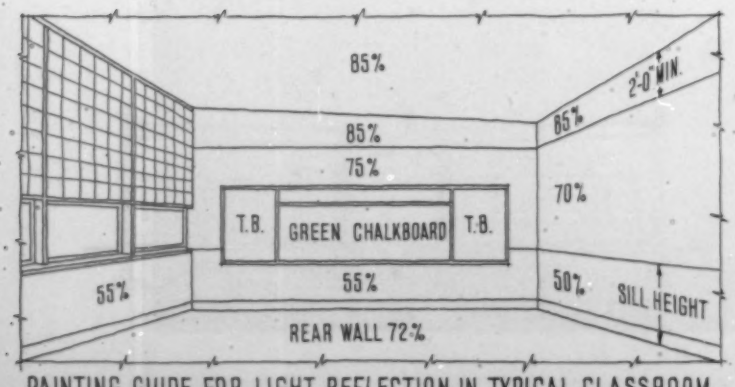
ORCHARD AVE. ELEMENTARY SCHOOL

Grand Junction

Atchison & Kloverstrom, Architects

In the A. H. Dunn Elementary School, there is direct exterior egress from all classrooms. In other schools, exterior doors are provided in primary grades so these age groups may be taken out for air and exercise at the teacher's discretion, in a fashion which precludes corridor noise and disturbance to other classes. Although not intended primarily for emergency (fire or otherwise) use, they have, of course, that usage if necessary.

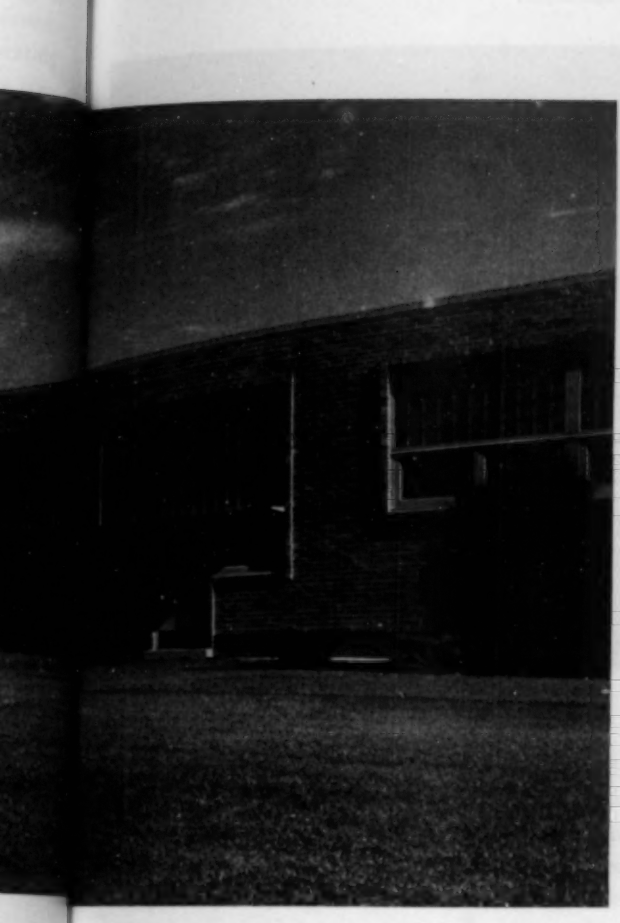
The Orchard Avenue Elementary School at Grand Junction, completed in the fall of 1948, is noteworthy as being the first "Harmon technic" school completed in Colorado. It is also one unit in an entire district program which includes: additions to two elementary buildings to more than double their capacity; a new high school building for 1200 students; and a six-classroom addition to the Orchard Avenue Elementary School to be constructed as soon as financial conditions permit.



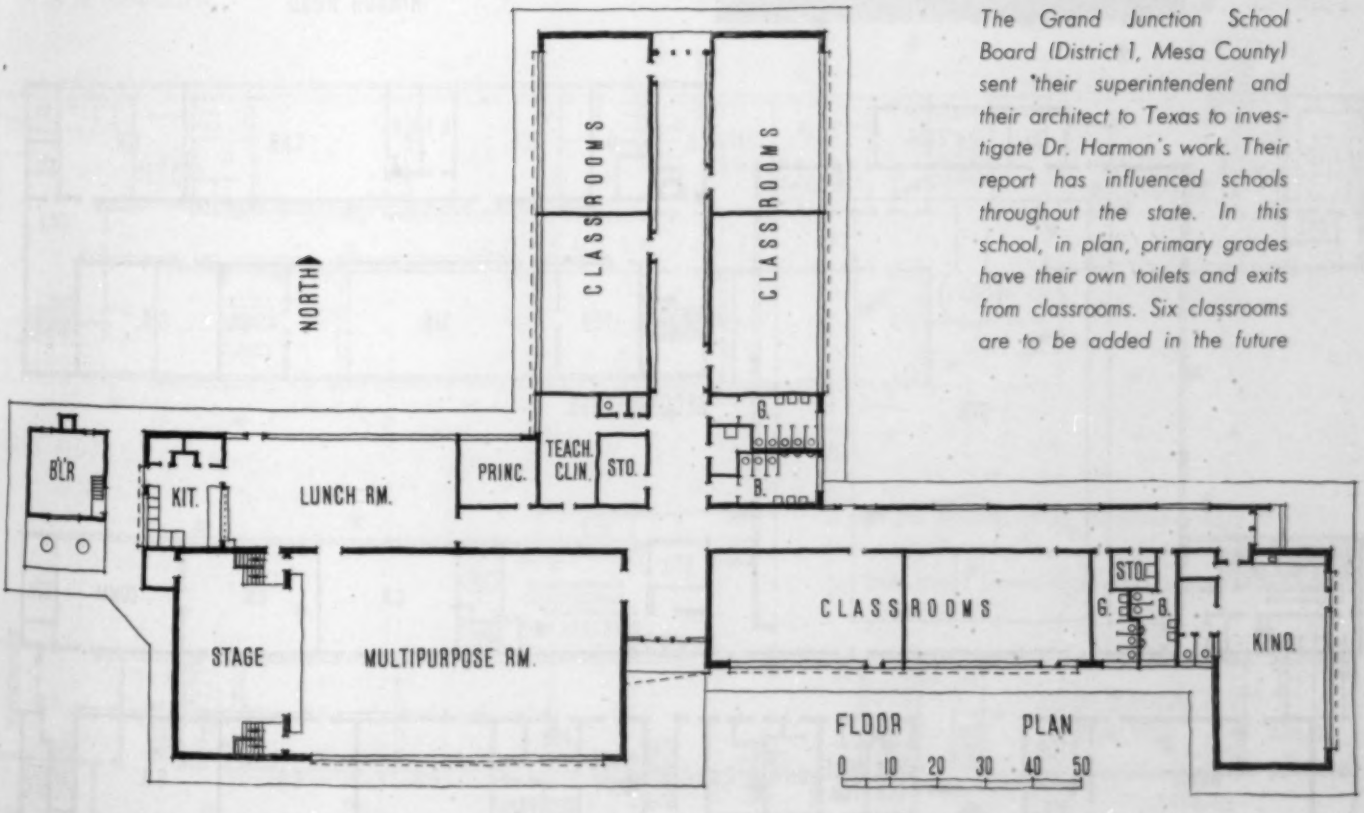
PAINTING GUIDE FOR LIGHT REFLECTION IN TYPICAL CLASSROOM

In construction, a substantial saving has been made in all these schools by combining roof and ceiling joists. The only attic space under roof on any school is over corridors (used as plenum for exhaust of classroom air) and in longspan bar joists over general-purpose rooms. The architects figure a 20 per cent saving in radiation on all window areas using glass block in lieu of glass. Roof insulation (usually 13/16 in. glass fiber board) is placed on top of red rosin paper over roof sheathing with built-up roof over, to put insulation where it does the most good and cut application cost. One-story buildings, says Mr. Atchison, permit sufficient economies to overbalance the economies inherent in two-story buildings.

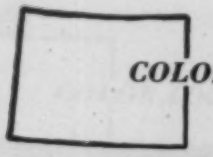
Regarding community facilities, he says: ". . . It seems to us that . . . the more any well-designed modern school is planned for community use the better the community investment. Education is not confined to children. Use of general-purpose areas by the public



Marshall Brooks photos



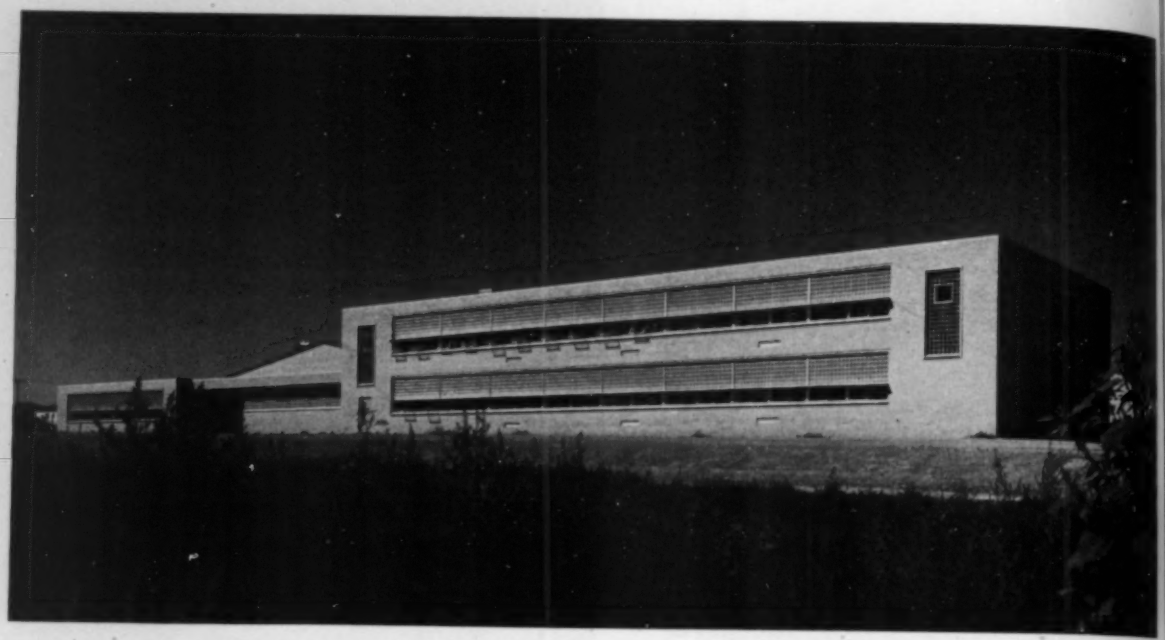
The Grand Junction School Board (District 1, Mesa County) sent their superintendent and their architect to Texas to investigate Dr. Harmon's work. Their report has influenced schools throughout the state. In this school, in plan, primary grades have their own toilets and exits from classrooms. Six classrooms are to be added in the future



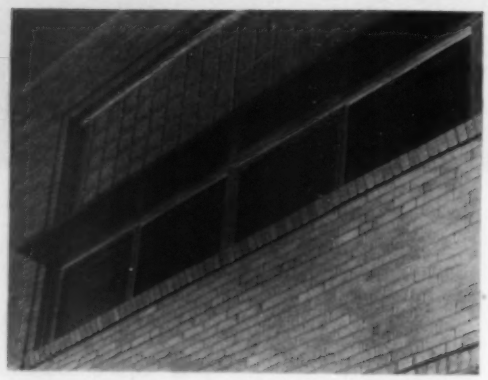
AURORA HIGH SCHOOL

Aurora

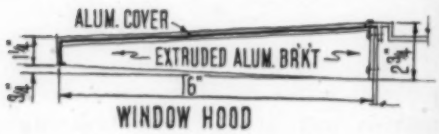
Atchison & Kloverstrom, Architects

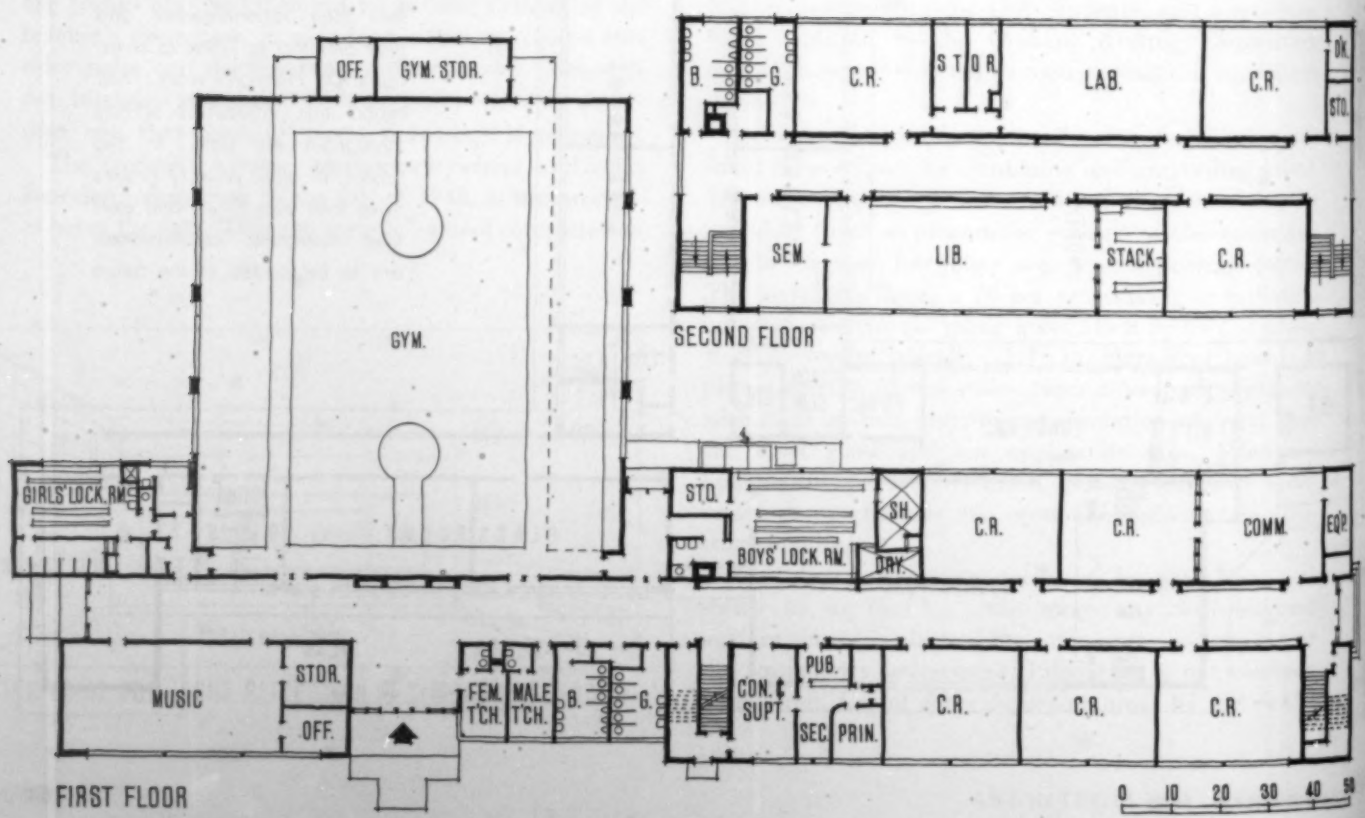


Marshall Brooks Photos



Aurora High School is designed to take an additional classroom wing and future auditorium — for the present, the auditorium in the adjacent Junior High School is used



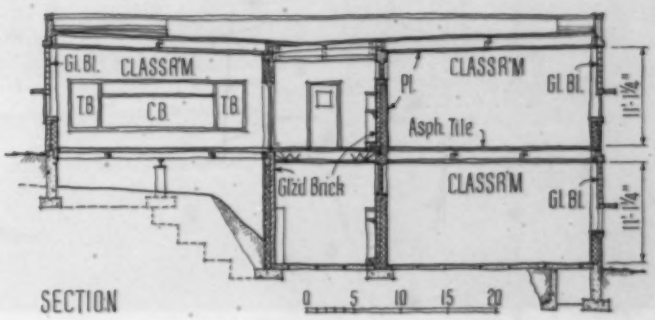


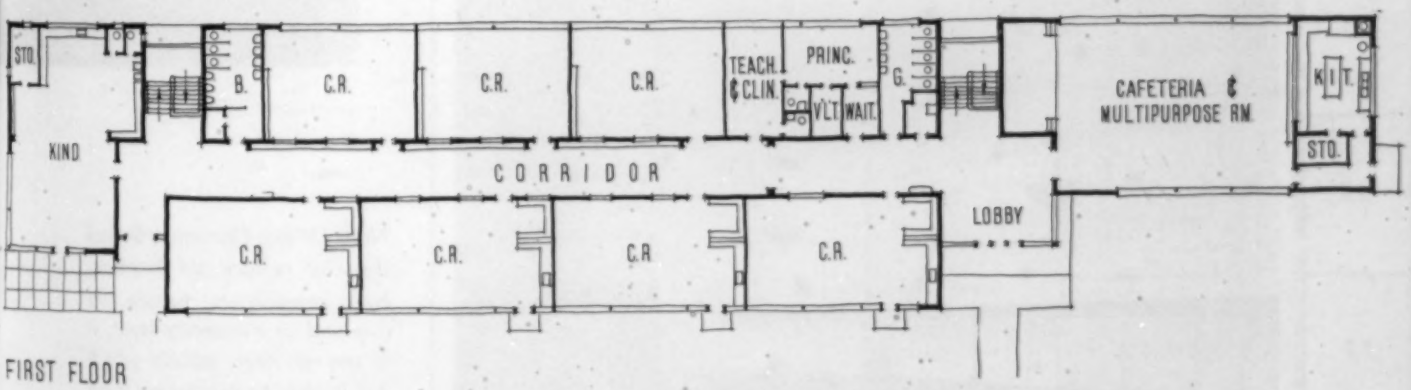
NORTH LITTLETON ELEMENTARY SCHOOL

Littleton **COLORADO**

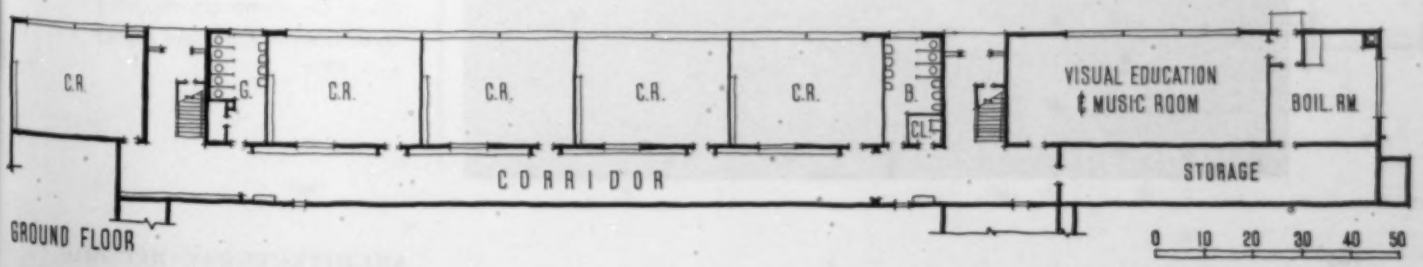
Atchison & Kloverstrom, Architects

after school hours provides a sympathetic understanding of school problems. . . . *All* the schools planned in this office have had careful consideration of the community use factor. In every instance actual community usage was gratifying. In Grand Junction, a little theater group has been giving regular productions; this in addition to the P. T. A., Boy and Girl Scout programs for parents, special school programs, etc. At Craig, Moffat County High School auditorium is the only community-owned area in which an artist series (principally music) may be conducted."



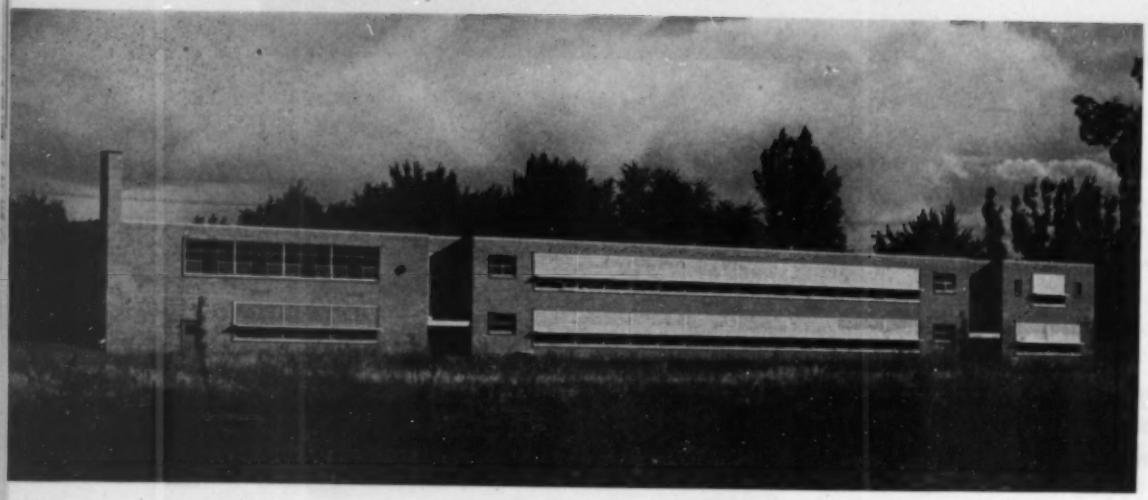


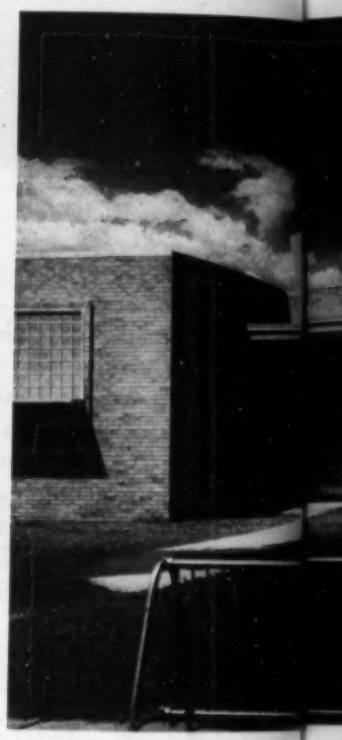
North Littleton school takes advantage of a sloping site, has upper floor entrances from street, lower floor, from playground

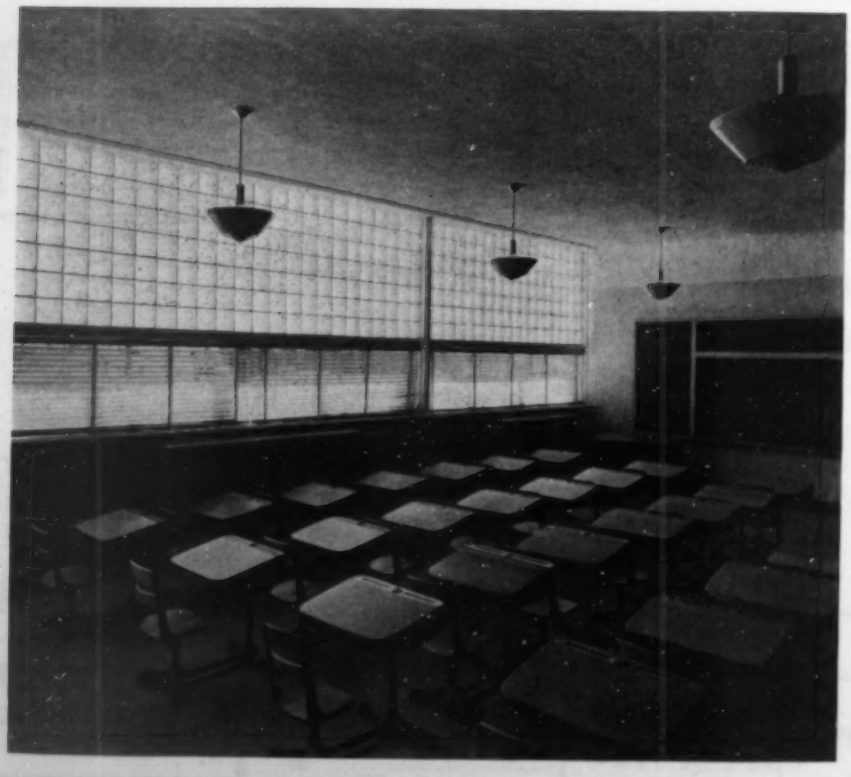


NORTH LITTLETON SCHOOL

Kindergarten, left, shows generous free space as seen from coat alcove. Door leads to segregated play space







North Littleton Elementary School does not replace old facilities; built primarily to handle an overload at elementary level, it is one of three schools which will have to be constructed there in the next two years to keep pace with expanding needs. One, now under consideration by the school board, will replace an elementary building constructed in 1883 and added to in 1904

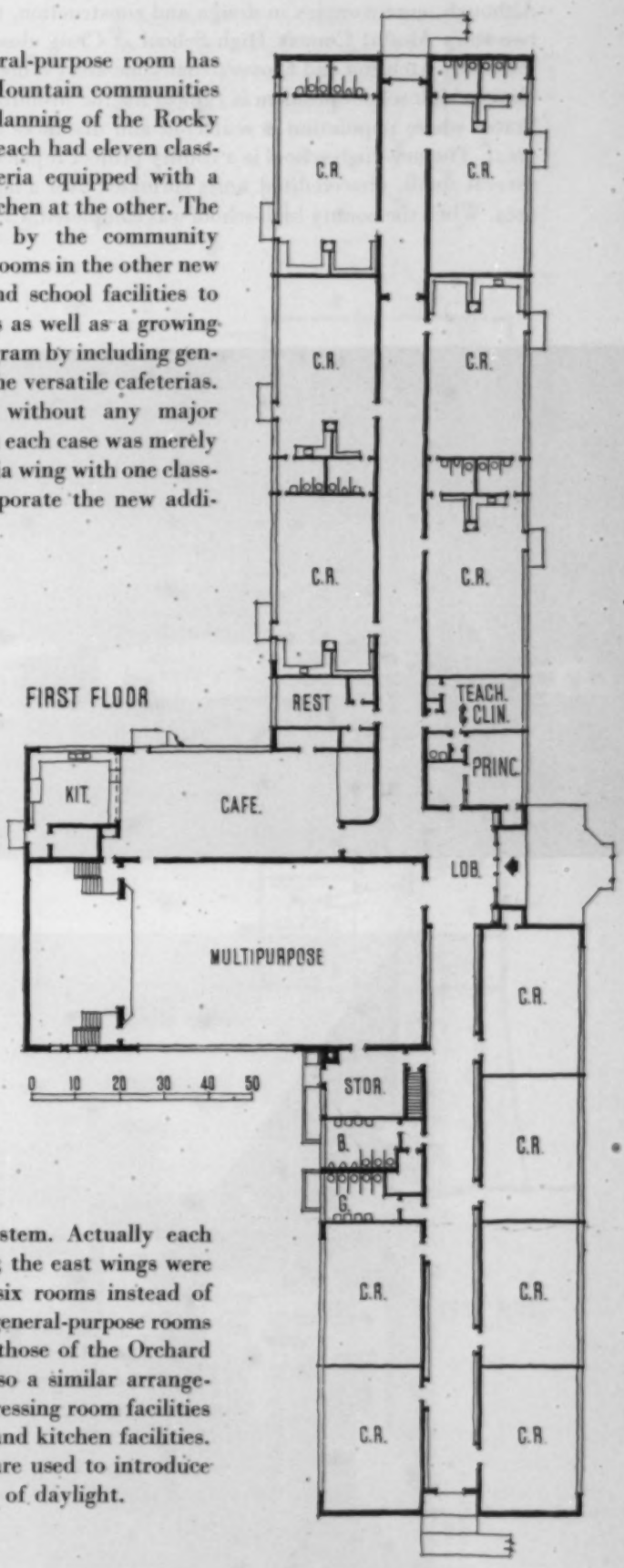
TWO IDENTICAL ELEMENTARY SCHOOLS

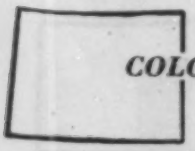
Rocky Ford *COLORADO*

Atchison & Kloverstrom, Architects

Marshall Brooks Photos

How important the general-purpose room has become to these Rocky Mountain communities is demonstrated in the planning of the Rocky Ford schools. Originally, each had eleven classrooms and a large cafeteria equipped with a platform at one end, a kitchen at the other. The school board, impressed by the community value of general-purpose rooms in the other new schools, decided to expand school facilities to accommodate adult needs as well as a growing interscholastic sports program by including general-purpose rooms plus the versatile cafeterias. This was accomplished without any major changes. The new room in each case was merely butted against the cafeteria wing with one classroom eliminated to incorporate the new addition into the corridor system. Actually each school gained a classroom; the east wings were extended to provide for six rooms instead of four. Dimensions of these general-purpose rooms are almost identical with those of the Orchard Avenue room. There is also a similar arrangement of under-the-stage dressing room facilities and coupling of cafeteria and kitchen facilities. Glass block panels again are used to introduce and control dissemination of daylight.



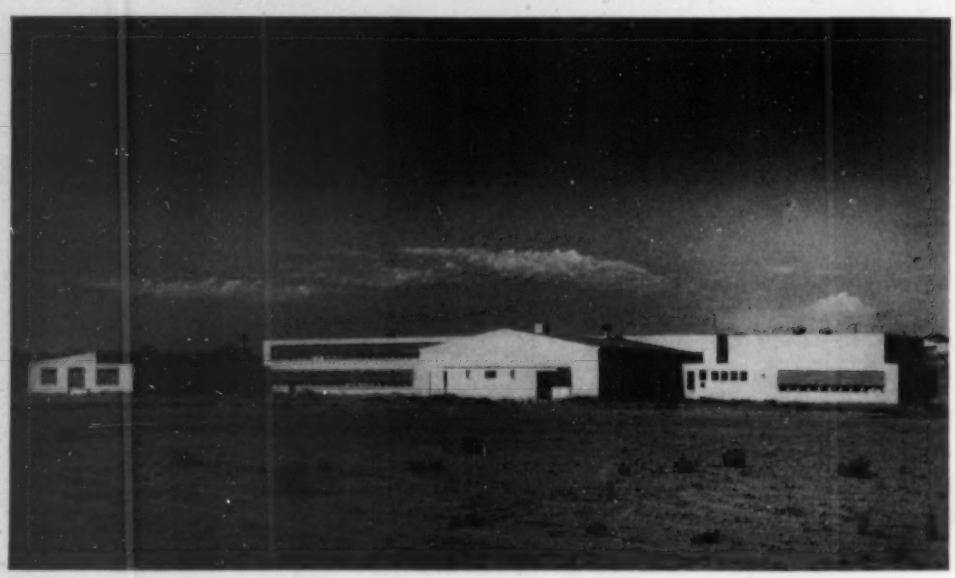


MOFFAT COUNTY HIGH SCHOOL

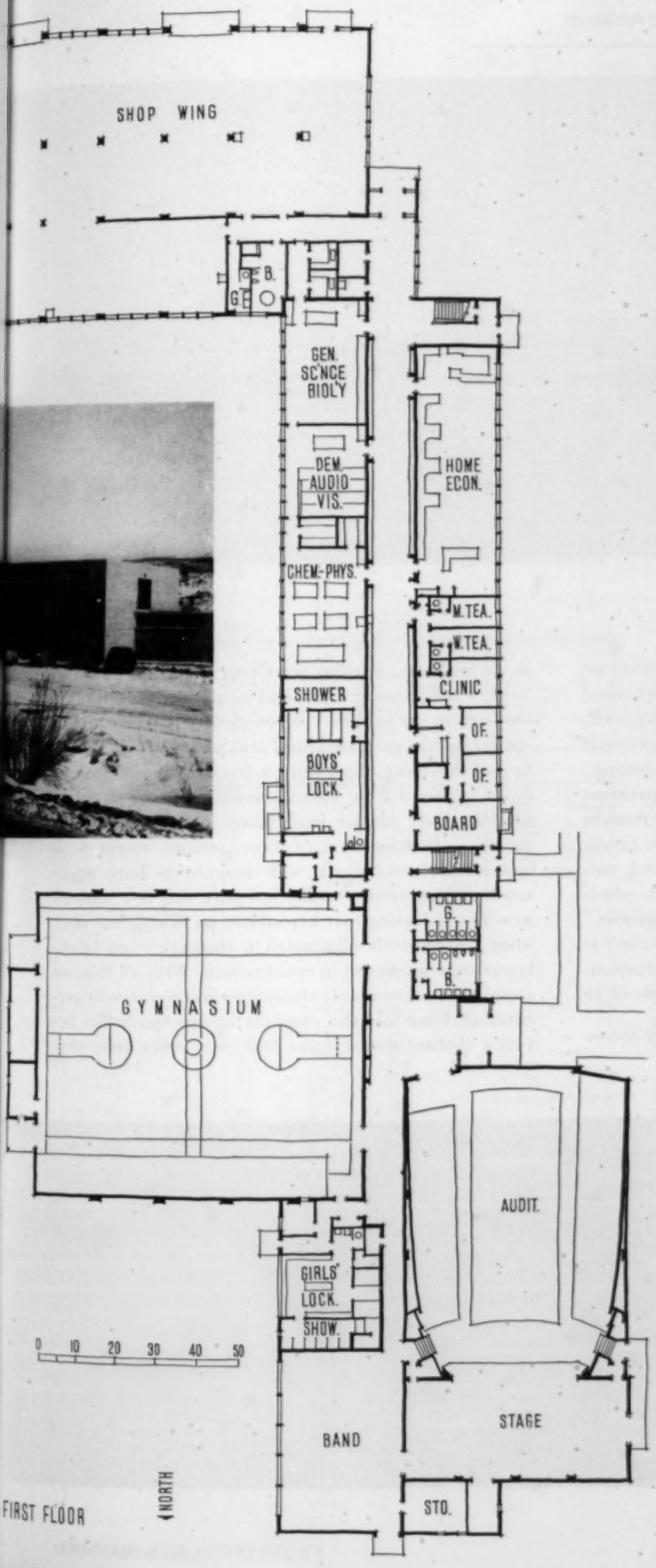
Craig

Atchison & Kloverstrom, Architects

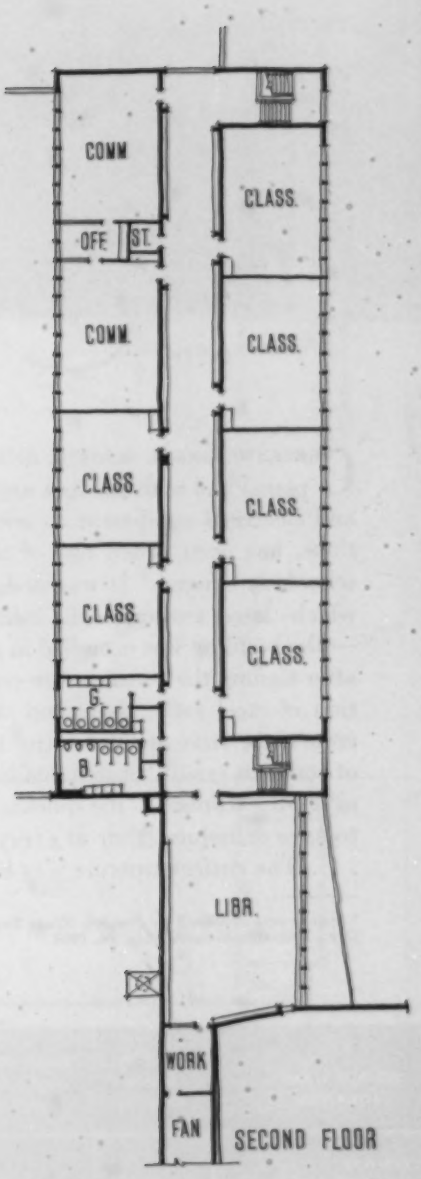
Although more complex in design and construction, the two-story Moffat County High School at Craig closely resembles Atchison and Kloverstrom's one-story schools. Craig's high school problem is typical for the Mountain States where population is scattered and distances are great. The new high school is a county project replacing several small, unaccredited units sprinkled over a large area. When the county high school was completed, Craig made its old high school a junior high to alleviate a shortage at that level. Moffat County High School, 390 ft long, has five principal units on its first floor: 600-seat auditorium, 78 by 90-ft gymnasium, administrative offices, etc., laboratories and special rooms, and shop. Second floor houses classrooms and library with its work rooms, and a fan room. Finish and equipment in Home Economics Room, bottom, is typical of laboratories.



Marshall Brooks Photos



On a cost per sq ft basis Moffat High School, at $9.89, is below the average for this firm's work; but due to the inclusion of such items as special laboratory equipment, auditorium, stage, etc.,

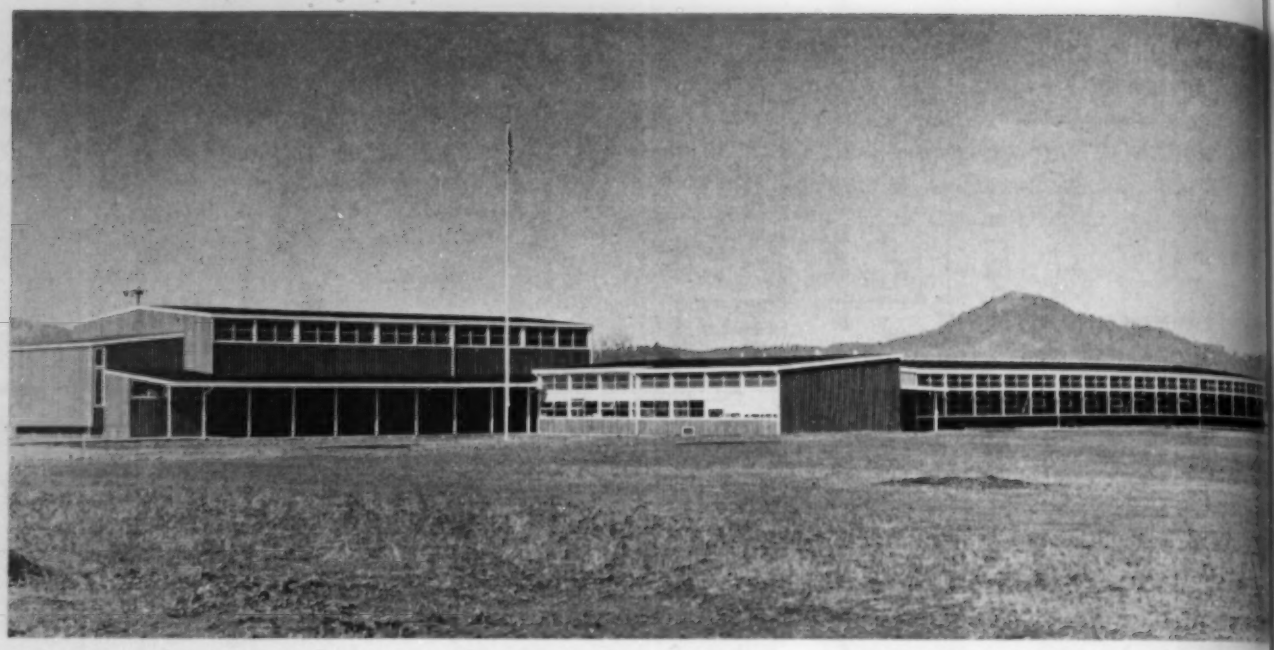


cost per "classroom" is quite high — over $40,000. But this is not a fair statement: modern pedagogy insists upon stage, shop, laboratories, band room, gymnasium as teaching facilities.

CRESLANE GRADE SCHOOL

Creswell District 40, Lane County

Wilmsen & Endicott, Architects



Carroll C. Calkins photos

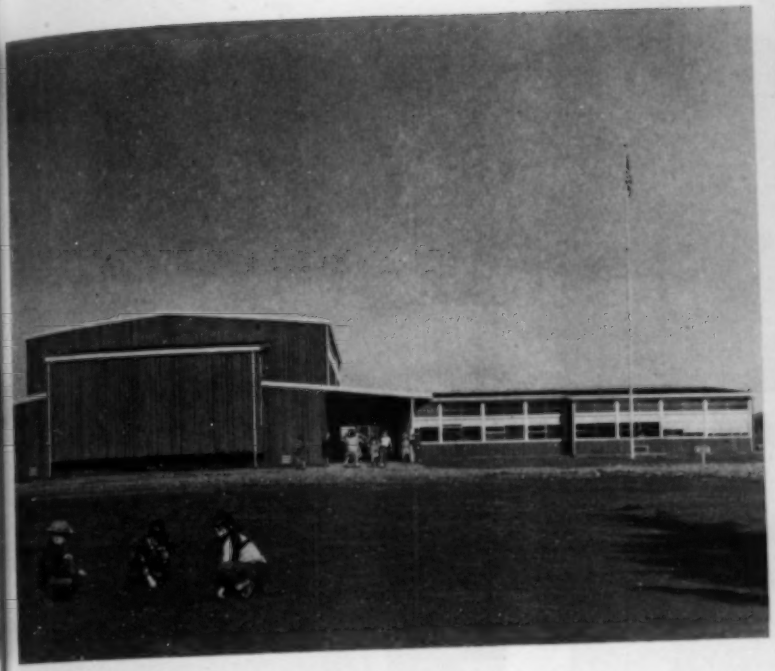
CRESLANE GRADE SCHOOL, designed for expansion (see plans) and with the first unit containing mechanical and electrical equipment to accommodate future additions, has been called one of the lowest-cost-per-sq-ft schools in Oregon.* It was designed for rigid economy, which almost automatically meant speed of construction — the building was occupied in a little over five months after signing the construction contract. With the exception of steel sash, aluminum skylights, roof and concrete slab, virtually the entire building is wood, which of course is readily obtainable locally. "In our opinion," says Mr. Wilmsen, "the quickest way to save money is to save or reduce labor at every phase of construction. . . . The entire structure was based on a module of 16 in.-48 in.-96 in.; in other words, to receive 48 by 96 in. fir plywood (interior walls) and insulation board ceiling, studs 16 in. on centers." Wood girders were modularly spaced to take preglazed steel sash and 2 by 6 in. T & G fir roof sheathing, eliminating rafters. Ceilings are furred down on No. 3 2 by 4's to provide space for electrical conduit. Only plaster in building is boiler-room fireproofing. Heating system (low-pressure steam with stoker and forced draft) was designed to burn waste sawdust from nearby mills; not only was last winter's monthly operating cost kept down to $35.00, but also, using forced draft eliminated a chimney — no bricklayers were employed in construction. With all this, no essential was sacrificed; classrooms have east-west orientation, bilateral light, carefully figured sun-baffles between obscure-glazed upper and clear lower sash, etc.

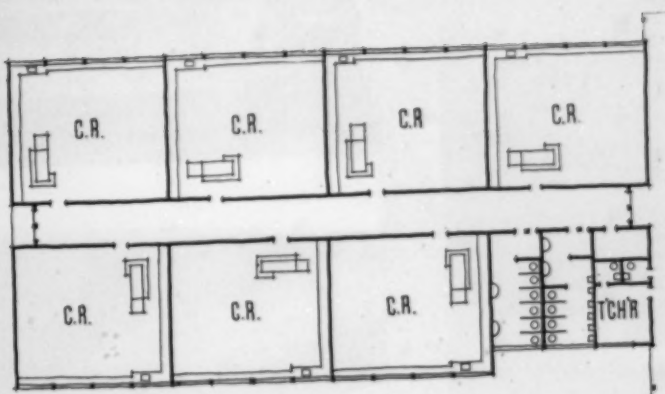
* *Statement credited to Oregon State Dept. of Education; see Eugene, Ore., Register-Guard, Aug. 24, 1950.*

SCHOOL NAME, LOCATION	NO. PUPILS (Design Capacity)	BUILDING COSTS —No Fees —Complete	UNIT COSTS —Per Sq Ft —Per Classroom	NUMBER OF ROOMS	DATE OF —Contract —Occupancy	STRUCTURE
CRESLANE GRADE SCHOOL, LANE COUNTY, OREGON	300 (first unit)	$139,264 165,000*	$6.49 16,500.00	10 Classrooms, Multi-purpose Room	June 1, '49 Nov. 1949	Wood girders, 2 by 6 in. T & G sheathing, no joists; modular layo

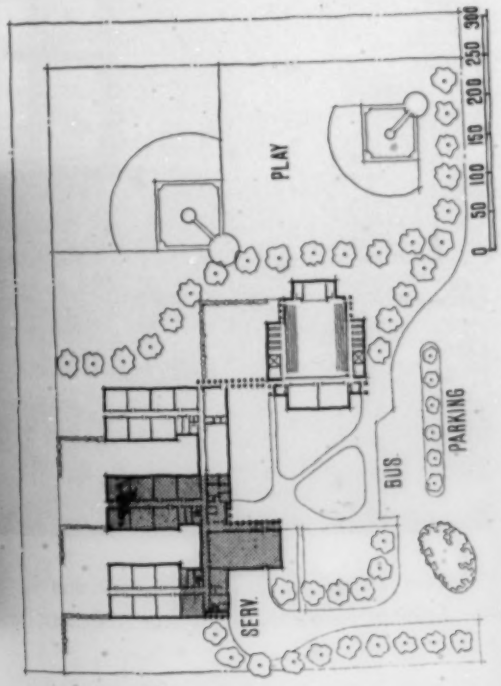
EXTERIOR WALLS	ROOF	METAL WORK	INSULATION	WINDOWS	ROOM FLOORS	INTERIOR WALLS	CEILINGS	DOORS (Exterior)	HEATING and VENTILATING	LIGHTING FIXTURES
Cedar board and batts, rough sawn surface exposed and stained, trim painted	Asbestos composition	Galvanized iron	1-in. rigid (roof)	Pre-glazed steel sash, aluminum skylights over corridors	Asphalt tile over wood	Fir plywood stained	Furred down composition and insulation board	Painted	Sawdust burner, stoker, forced draft, LP steam convectors, unit heaters and ventilators	Incandescen

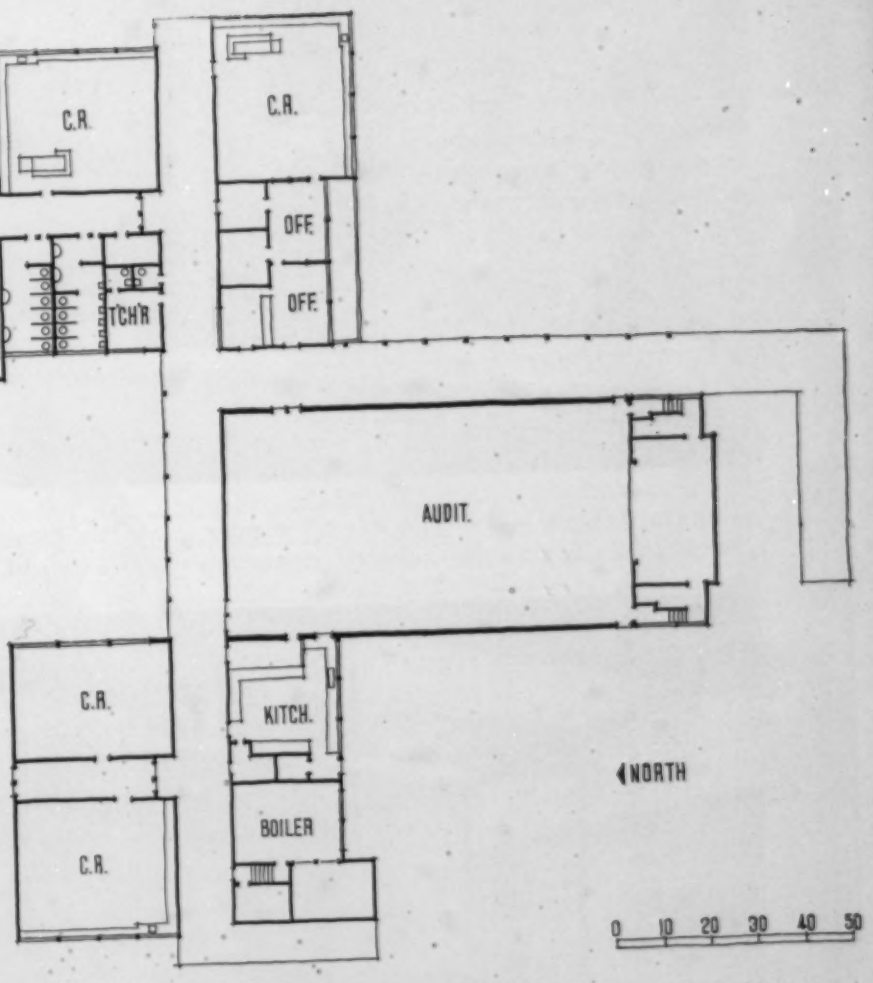
* Includes cost of land equipment, fees.





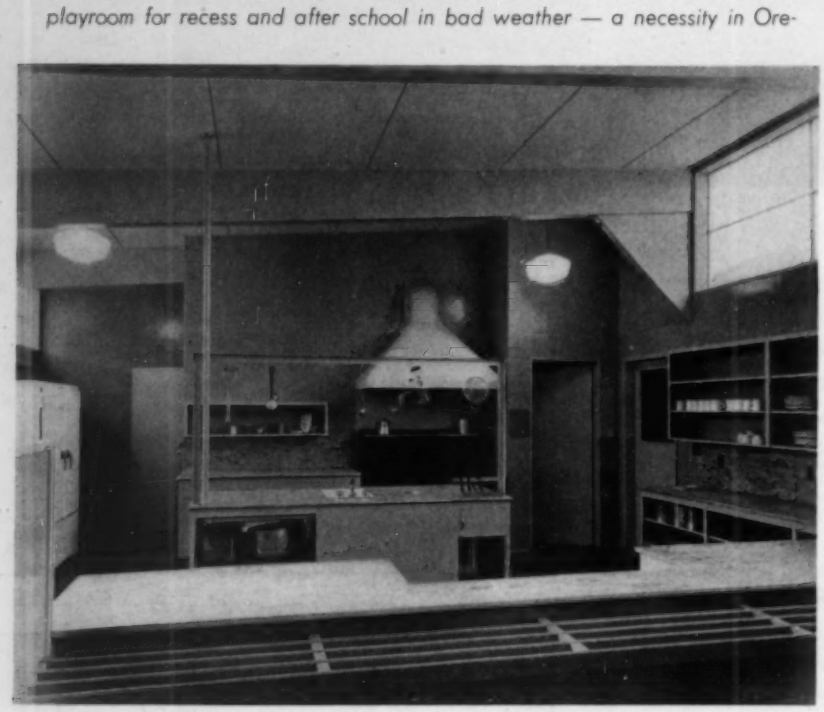
FLOOR PLAN





Plot plan at left shows eventual complete scheme, of which present building (above) is first step. Next will come northwest wing; at that time two present classrooms will become toilets and health suite. Present sewage disposal will accommodate two classroom wings; boiler and electrical installations, entire scheme

Multi-purpose room, above, serves as cafeteria at noon; as enclosed, heated playroom for recess and after school in bad weather — a necessity in Ore-

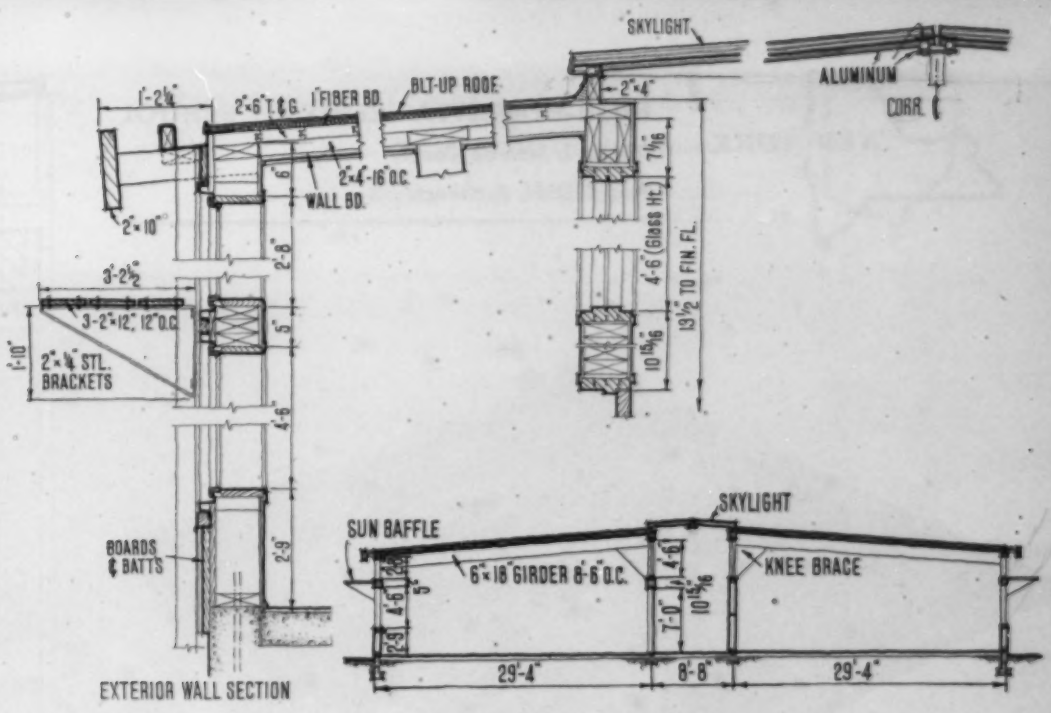


gon's rainy climate; as auditorium; for adult programs, dinners, etc. Kitchen, center, adjoins. Bottom: classroom near offices, eventually to become health suite

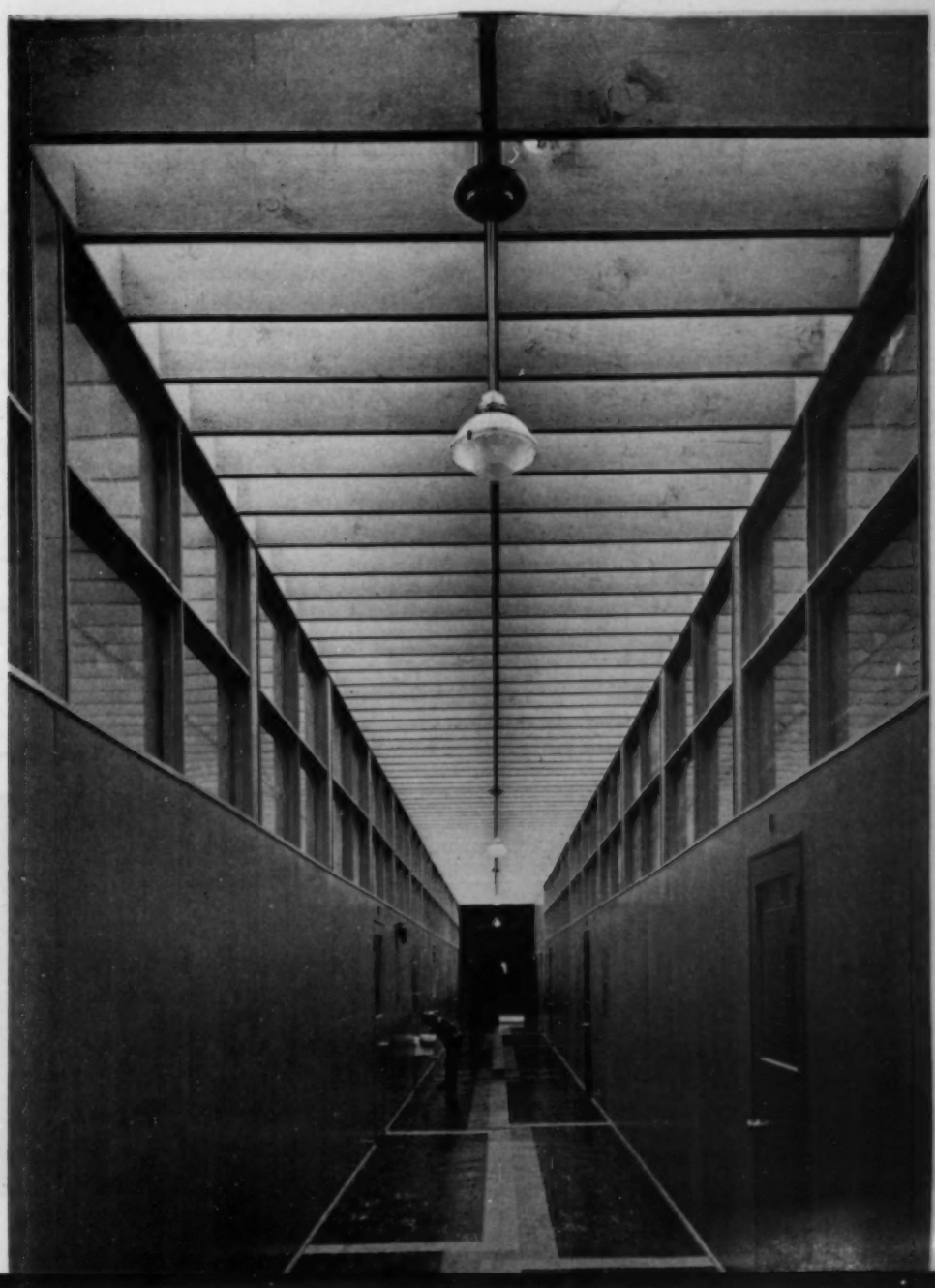
Two classrooms above show bilateral lighting, adaptability, typical cabinets

Carroll C. Calkins photos

Note framing module based on steel sash and plywood sizes



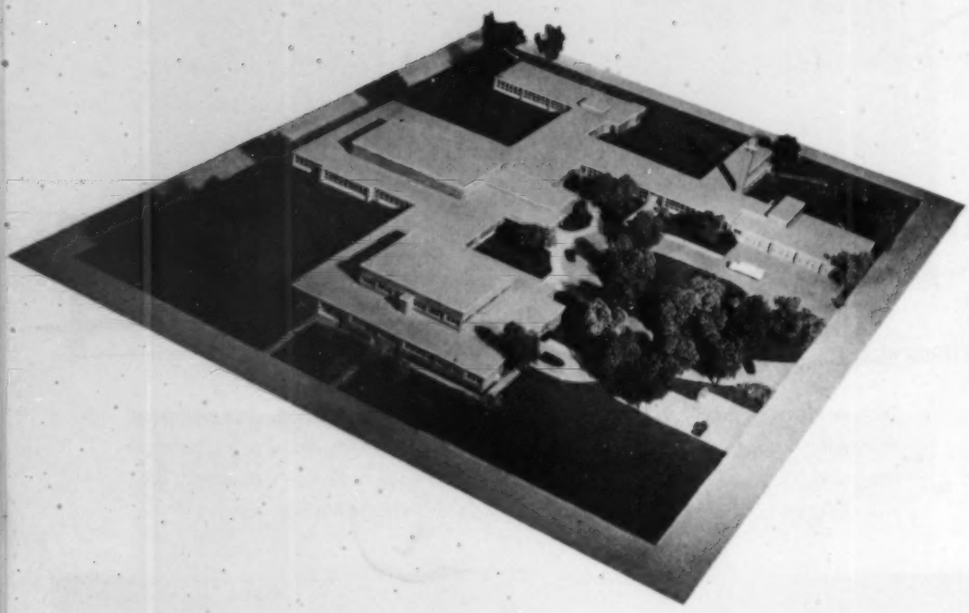
Section, details and photo show construction mostly of native wood, and method of borrowing light from interior corridor for classrooms either side. Each classroom wing will be a self-sufficient unit during normal school hours; only at recess, etc., will children have to use the outdoor, roofed corridors between wings

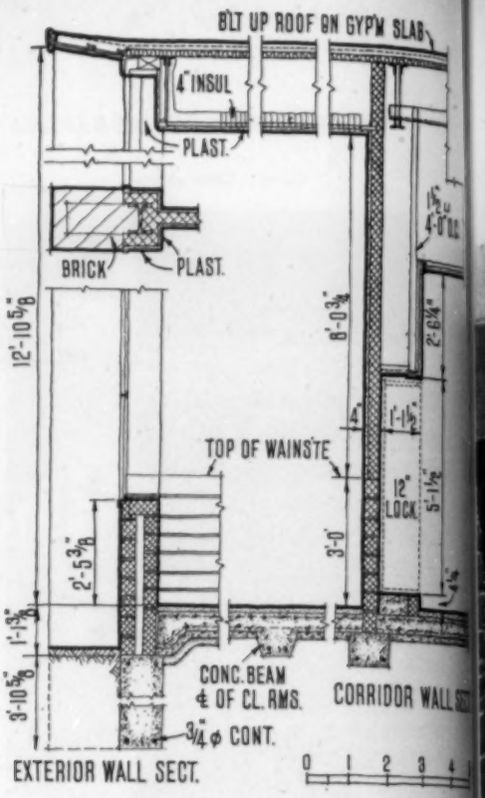


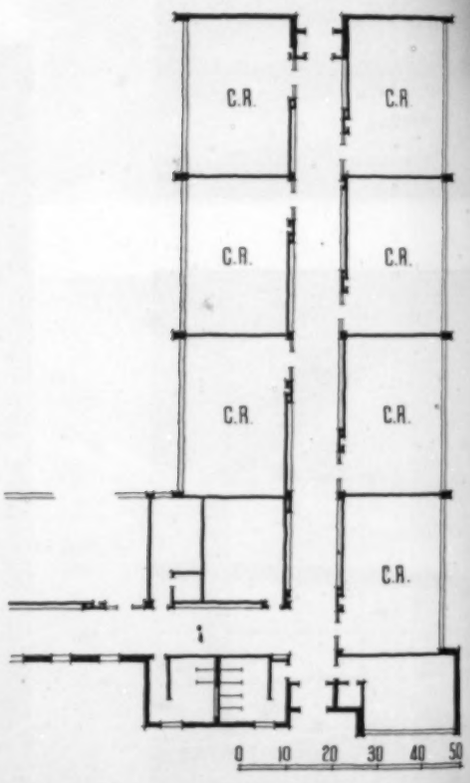
RUSH-HENRIETTA CENTRAL SCHOOL

District 1, Monroe County

Ade & Todd, Architects







RUSH-HENRIETTA Central School, now under construction, has the distinction of having been contracted for, in mid-1950, substantially under the expected figure. One of the first one-story schools in a region where multi-story buildings have been considered essential, it achieved its low cost because in plan and section (portions appear at right) dimensions were adjusted to material and equipment sizes; because all frills were eliminated; and because such structural devices as a simple, repetitive structure (long-span steel joists, classroom length, carried on steel girders spanning from masonry corridor walls to piers) were employed wherever possible. Floor, a ribbed concrete slab, eliminates many yards of footings. Interiors are plastered above glazed tile wainscot; glass is all sealed double glazing; heating, ceiling radiant; roof, built-up over poured gypsum on glass fiber permanent forms.

*Costs do not include fees, teaching equipment, or exterior landscaping, but do include construction, mechanical, electrical work.

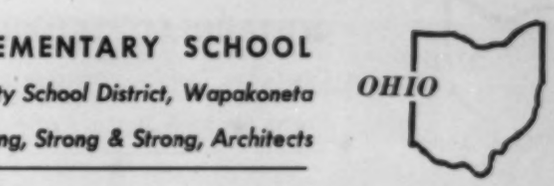
SCHOOL NAME, LOCATION	NO. PUPILS (Design Capacity)	BUILDING COSTS (No Fees)	UNIT COSTS —Per Sq Ft —Per Classroom	NUMBER OF ROOMS	DATE OF —Contract —Occupancy	STRUCTURE
RUSH-HENRIETTA CENTRAL SCHOOL, MONROE COUNTY, NEW YORK	1000	$1,131,212*	$11.09 28,280.30	40 Classrooms, Cafeteria, Kitchen, Laboratory, Library, Shops, Gym, Auditorium, Administration, Teachers	June, 1950 Fall, 1951	Masonry bearing walls and piers, steel girders, long-span bar joists at roof

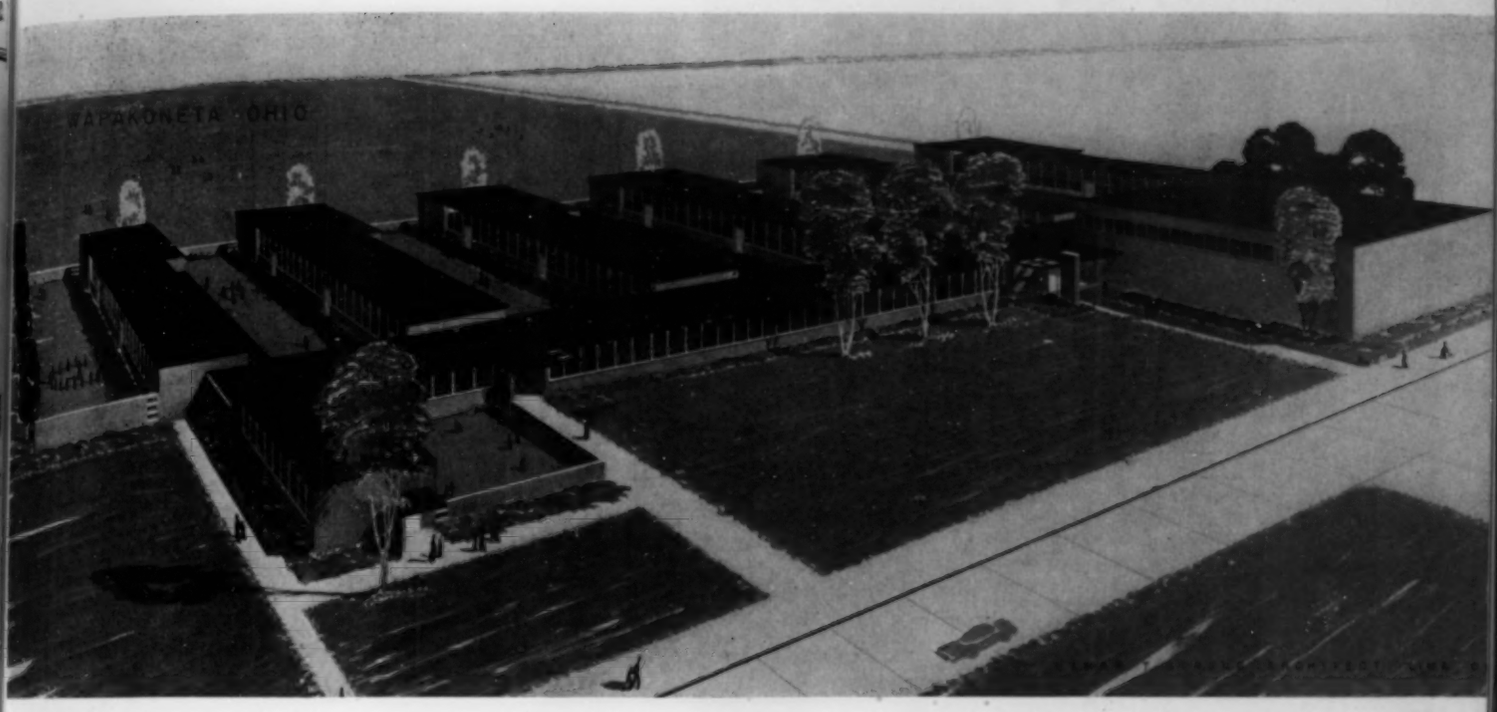
EXTERIOR WALLS	ROOF	INSULATION	WINDOWS	ROOM FLOORS	INTERIOR WALLS	CEILINGS	HEATING and VENTILATING	LIGHTING FIXTURES
Brick and tile	Poured gypsum on Tee irons, 1-in. glass fiber board, 20-yr pitch and gravel	4-in. glass fiber batts (roof)	Projection steel, double-glazed sealed glass	Asphalt tile	Tile and plaster; wainscoting, glazed tile	Acoustic plaster and metal	Radiant heating, ceilings; air supply system, all classrooms	Fluorescent and incandescent

CENTENNIAL ELEMENTARY SCHOOL

City School District, Wapakoneta

Strong, Strong & Strong, Architects





WAPAKONETA'S new elementary school, occupied now for a full school year, is extremely logical in concept. From its 344-ft-long, north-south oriented central corridor, six almost identical wings project to the east. Each wing was intended to contain three classrooms, all for one grade. In the fourth grade wing only one classroom was built; lighting and other services are placed ready for extension when the "stub" may be completed. Meanwhile, with school population not yet at its expected peak, the fourth grade occupies one classroom in its own wing and one in another. In the foreground of the rendering above — no photograph shows the full extent of the building as well — is the kindergarten, with its enclosed play yard. At far right is the wing housing the multi-purpose room, dining room, and kitchen.

** Unit cost does not include equipment or architect's fees. Both incandescent and flourescent lighting fixtures are included.*

SCHOOL NAME, LOCATION	NO. PUPILS NOW OCCUPYING	BUILDING COSTS (Not Including Equipment)	UNIT COSTS —Per Cu Ft —Per Classroom	NUMBER OF ROOMS	DATE OF —Contract —Occupancy	STRUCTURE
CENTENNIAL ELEMENTARY SCHOOL, WAPAKONETA, OHIO	530	$550,000	$1.02* 34,375.00	16 Classrooms, Cafeteria, Kitchen, Auditorium-Gym, Administration Offices, Clinic, Kindergarten	Oct. 14, '48 Fall, 1949	Masonry and steel framing, reinforcement concrete foundation, bar joists

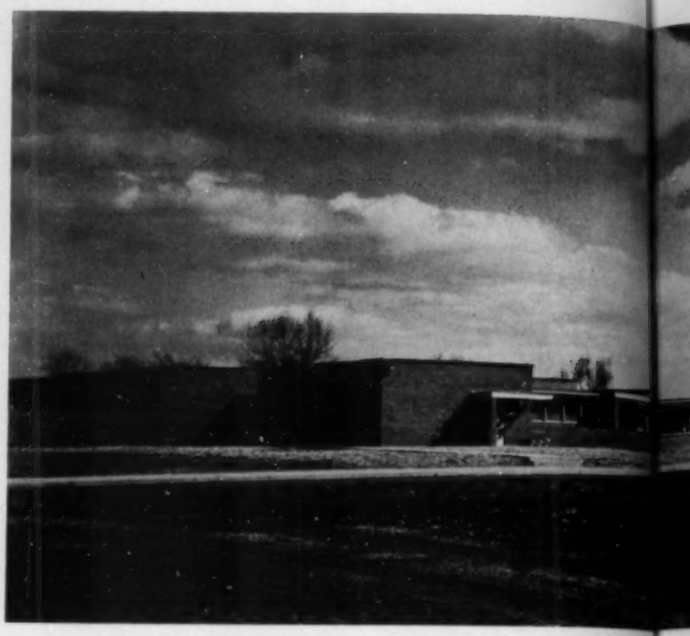
EXTERIOR WALLS	ROOF	METAL WORK	INSULATION	WINDOWS	CORRIDORS	ROOM FLOORS	INTERIOR WALLS	CEILINGS	DOORS —Exterior —Interior	HEATING and VENTILATING
Brick, cinder block back-up	20-yr pitch, gravel	Copper, cast brass	½-in. fiber board (roof)	Steel sash, wood frames	Ceramic tile	Asphalt tile	Fir panels, cement block	Acoustic tiles, ½-in. plaster board, aluminum foil	White Pine *Birch*	Oil boiler, LP steam convectors, unit heaters and ventilators

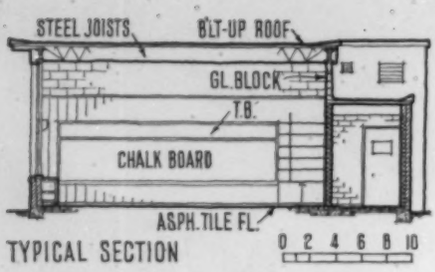
CENTENNIAL ELEMENTARY SCHOOL

City School District, Wapakoneta

Strong, Strong & Strong, Architects

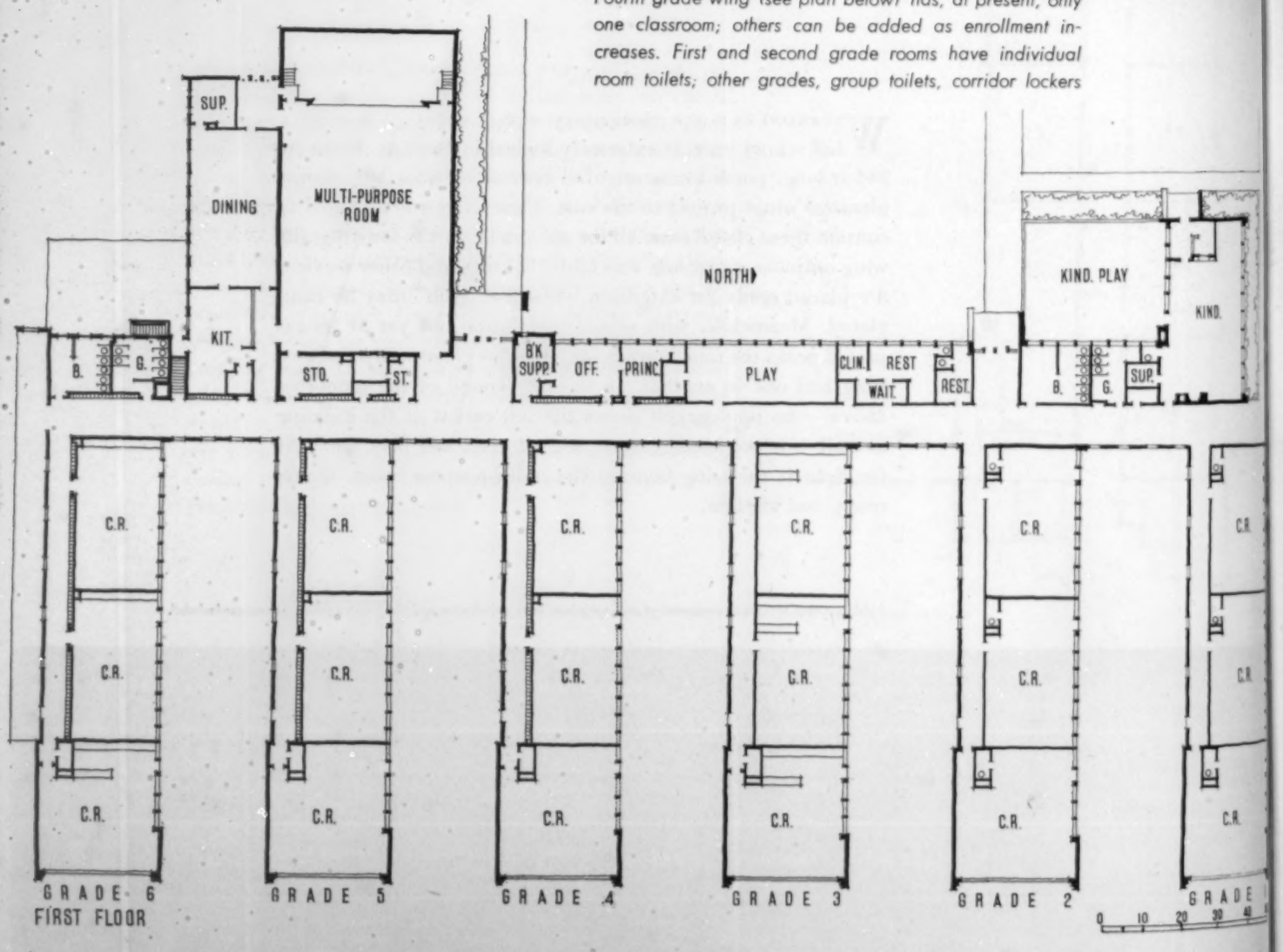
The kindergarten and one classroom in each wing have bilateral windows. North windows are unshaded; windows into which sun can enter have full-length drapes of glass fiber cloth. Southern clerestories in other classrooms are glass block. The roof, dead level, is built-up; classroom ceilings are acoustic board. When used as an auditorium, the multi-purpose room will seat about 600; it has an 18-ft-deep stage.



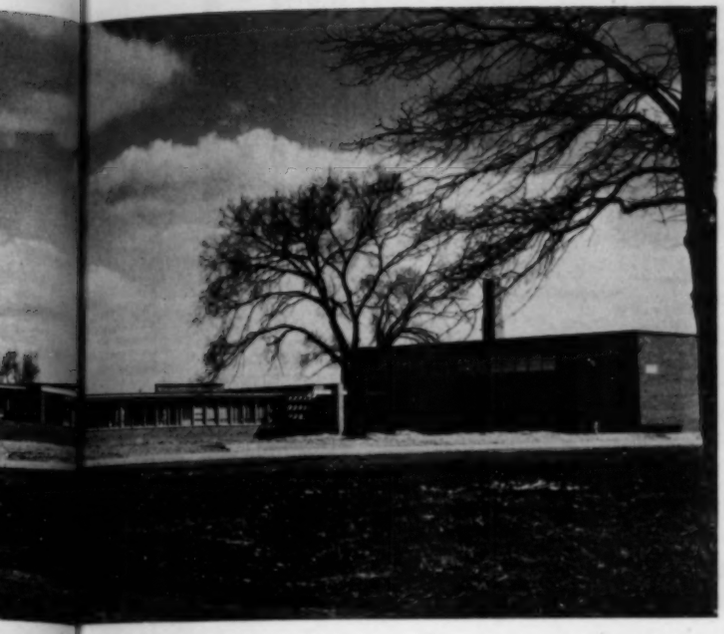


TYPICAL SECTION

Fourth grade wing (see plan below) has, at present, only one classroom; others can be added as enrollment increases. First and second grade rooms have individual room toilets; other grades, group toilets, corridor lockers

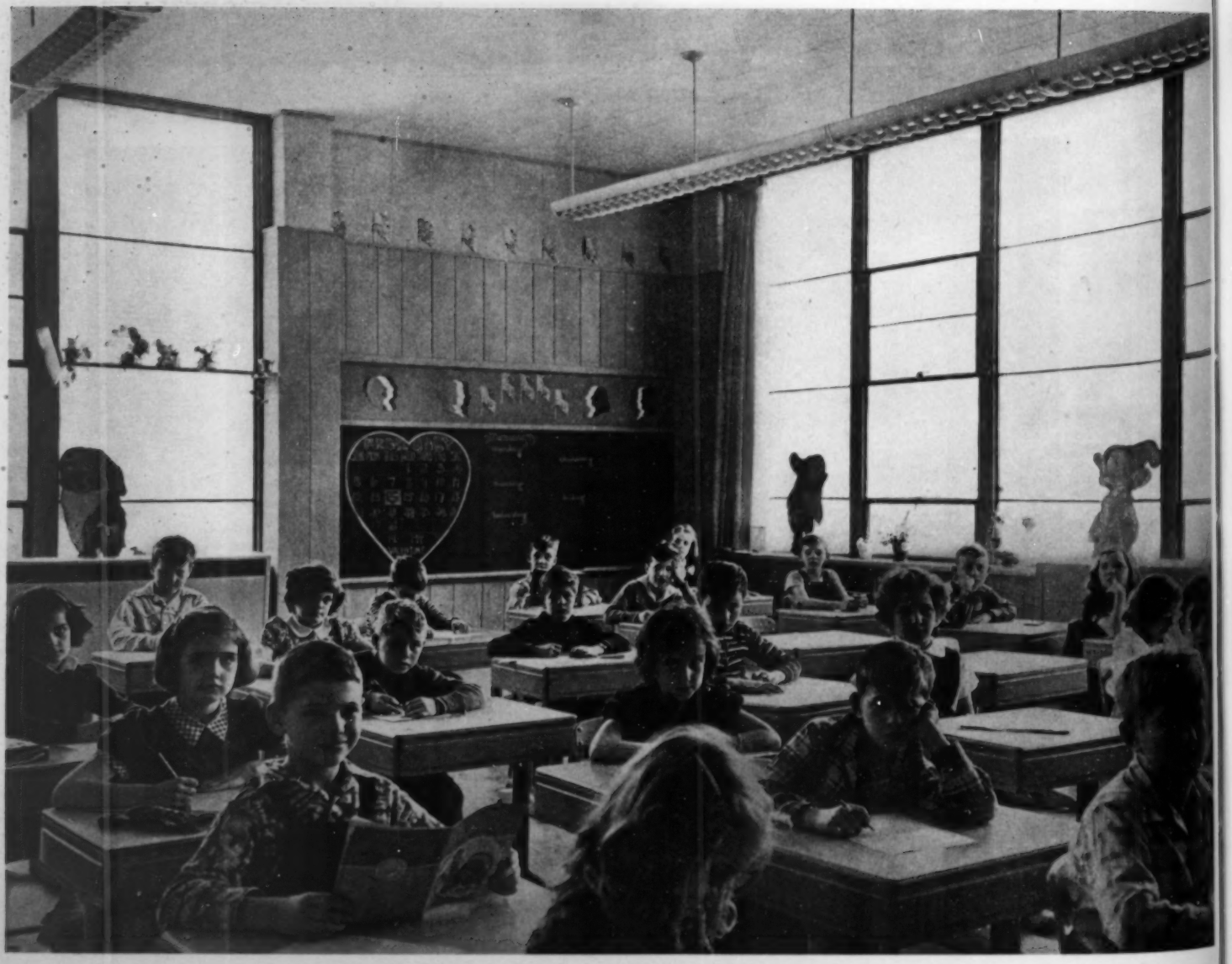


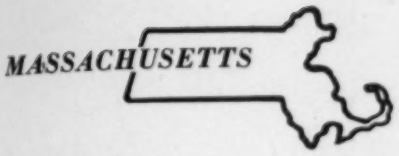
FIRST FLOOR



Above, primary grade's entrance, in background, walled outdoor play space for the kindergarten. Top right, looking from upper elementary grade's entrance toward kindergarten

Views of two types of classrooms show pine vertical board wall finish, with exposed concrete block above; note use of cabinets at project areas. Below is typical end-wing classroom, this one a primary room furnished with tables and chairs



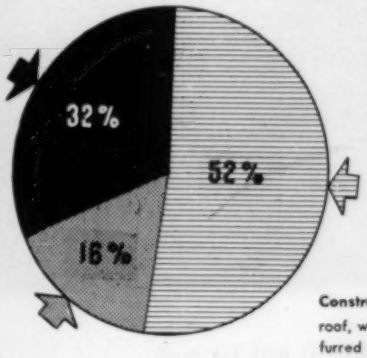


SCHOOL GAINS EDUCATIONAL SPACE

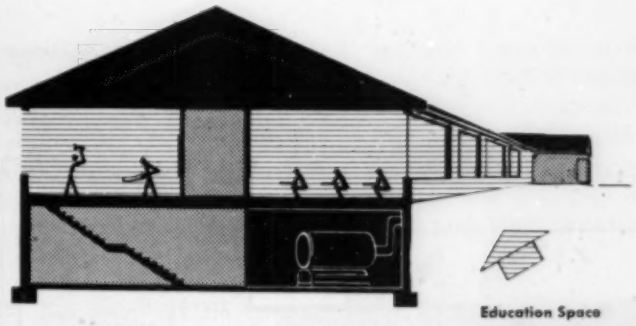
By multiple use of corridors and integration of heating with structure

Bogner and Richmond, Architects
Slocum and Fuller, Consulting Engineers
Parkman Construction Co., General Contractor

Dedham Country Day School, Dedham, Mass.



Construction Space
roof, walls, floors, foundations, furred spaces, boiler



Education Space
classrooms, activity alcoves, auditorium-gym, cafeteria, offices

Service Space
corridors, vestibules, stairs, toilets, storage, kitchen

COST ANALYSIS

Cost per 30 pupils	=	$ 27,060.00
Cost per pupil	=	$ 902.00
Cubic foot cost	=	$ 1.00 cu ft
Total cubage	=	112,157 cu ft

Building Construction	$112,067.06
Sewage Disposal	7,672.00
Land Improvement	3,000.00
Fees	9,579.12
Total Project Cost	$132,318.18

More than half of the Dedham Country Day School is education space. This high percentage resulted from ingenious planning: multiple use of space and integration of heating and ventilation with the structure.

A new school was needed to house 99 elementary and 34 pre-school pupils. Although it is a private school, the budget was limited. The site had been donated some years before.

The first design turned out to be too costly and had to be revised so, to begin with, the plan area was cut by more than one-third. However, by making multiple use of the corridor, the architects were actually able to provide more features than in the original plan: a combination cafeteria and library, a compact office suite, toilet rooms close to all classrooms, and a cafeteria kitchen which also can be used for cooking classes.

Normally, a corridor is just waste space when classes are in session. The architects reasoned that if the shop and studio were moved to a widened corridor, there would be plenty of room for the students to work, but the traffic area could be kept clear when the children enter and leave school. Every classroom has an outside door, so there would be no fire hazard. With the studio and shop in this location, creative work in progress would be in the open for all pupils to see.

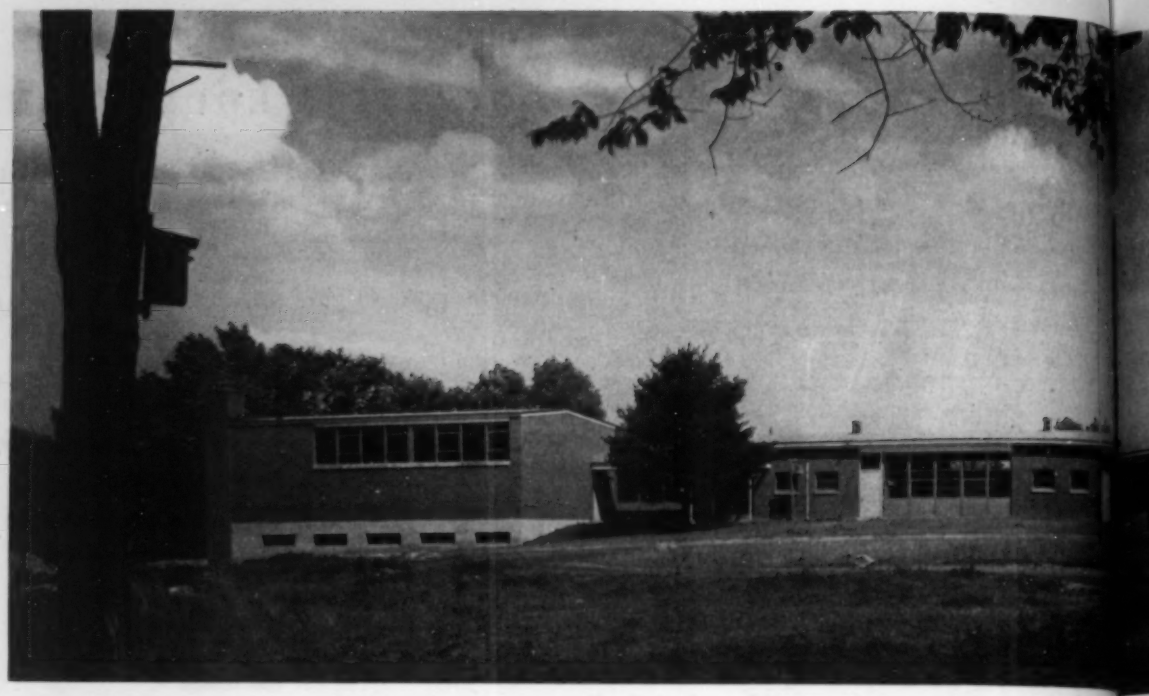
With a widened corridor, there was then space to locate three toilet rooms, instead of having a concentrated unit at the end of a line of classrooms. Not only were these rooms more conveniently placed, but their walls formed alcoves for the studio and shop.

Since toilet rooms could have lower ceilings than classrooms, there was sufficient space for fans and heating coils above them. And space above the corridor ceiling would serve well for return and exhaust ducts.

According to the architects, a major cost reduction item was provided by the unique heating system, in which warm air radiant heat is combined with ventilation.

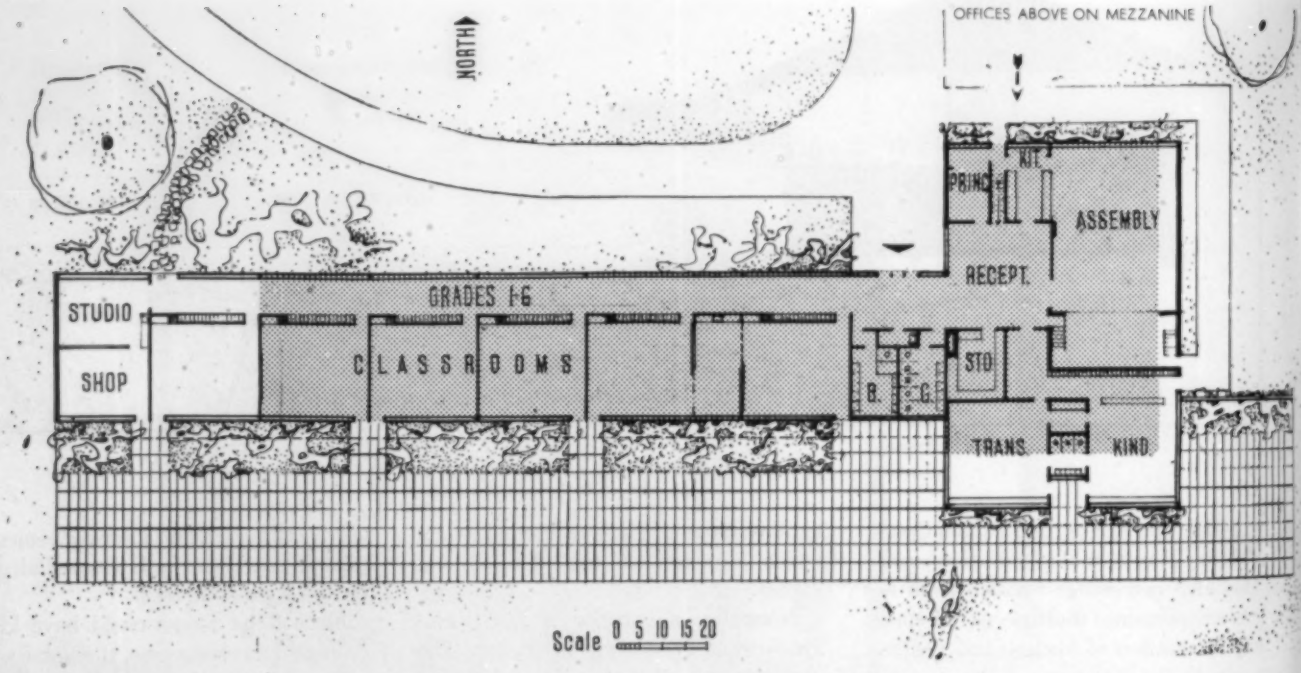
Heating System Design

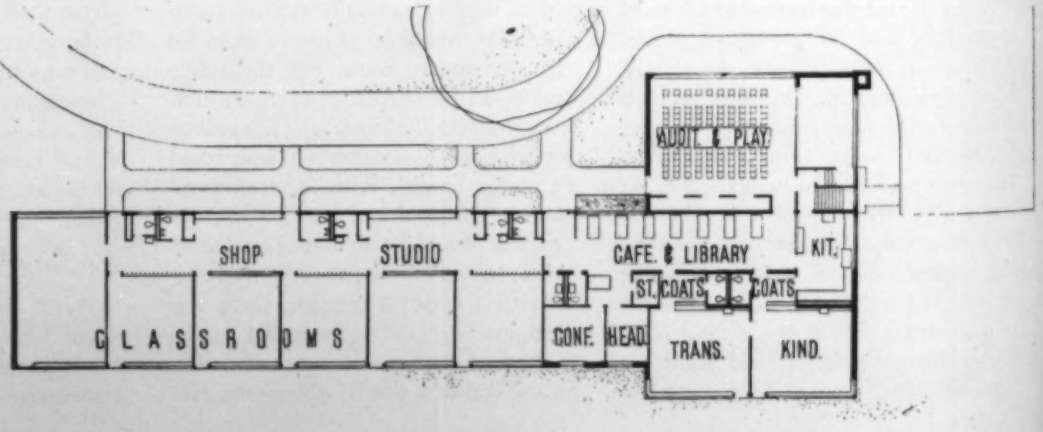
Warm air, first supplied to trenches about 3 ft wide around the perimeter of the building, keeps the floors warm. The trenches are also supply ducts for grilles



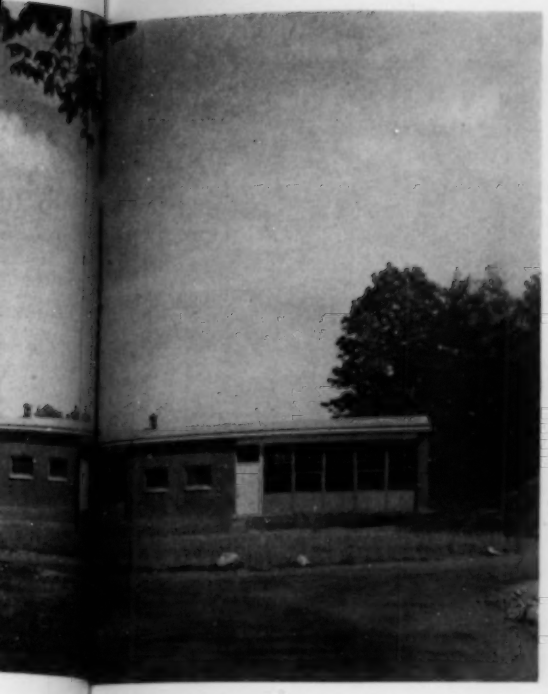
Joseph Molitor photos

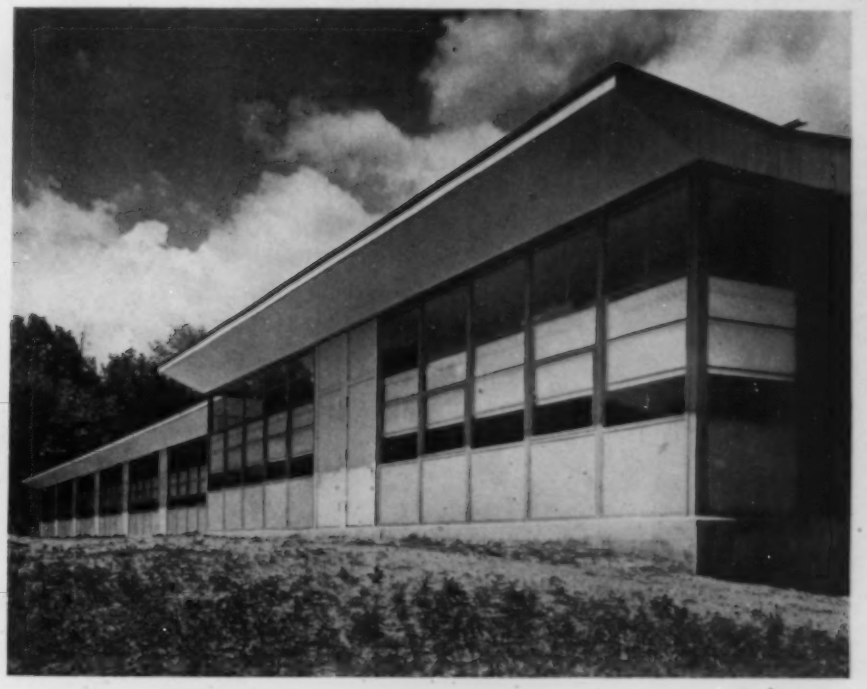
The north side visually expresses many of the school's functions with the auditorium left, studio and shop bounded by the three toilet rooms, and classroom at the end. Masonry is a patented hollow concrete unit somewhat larger than brick





Above: first scheme; gray shows extent of final plan, which is at right





The classrooms face south and have doors to the outside. Sheets formed of insulation between asbestos cement layers form the wall below steel windows

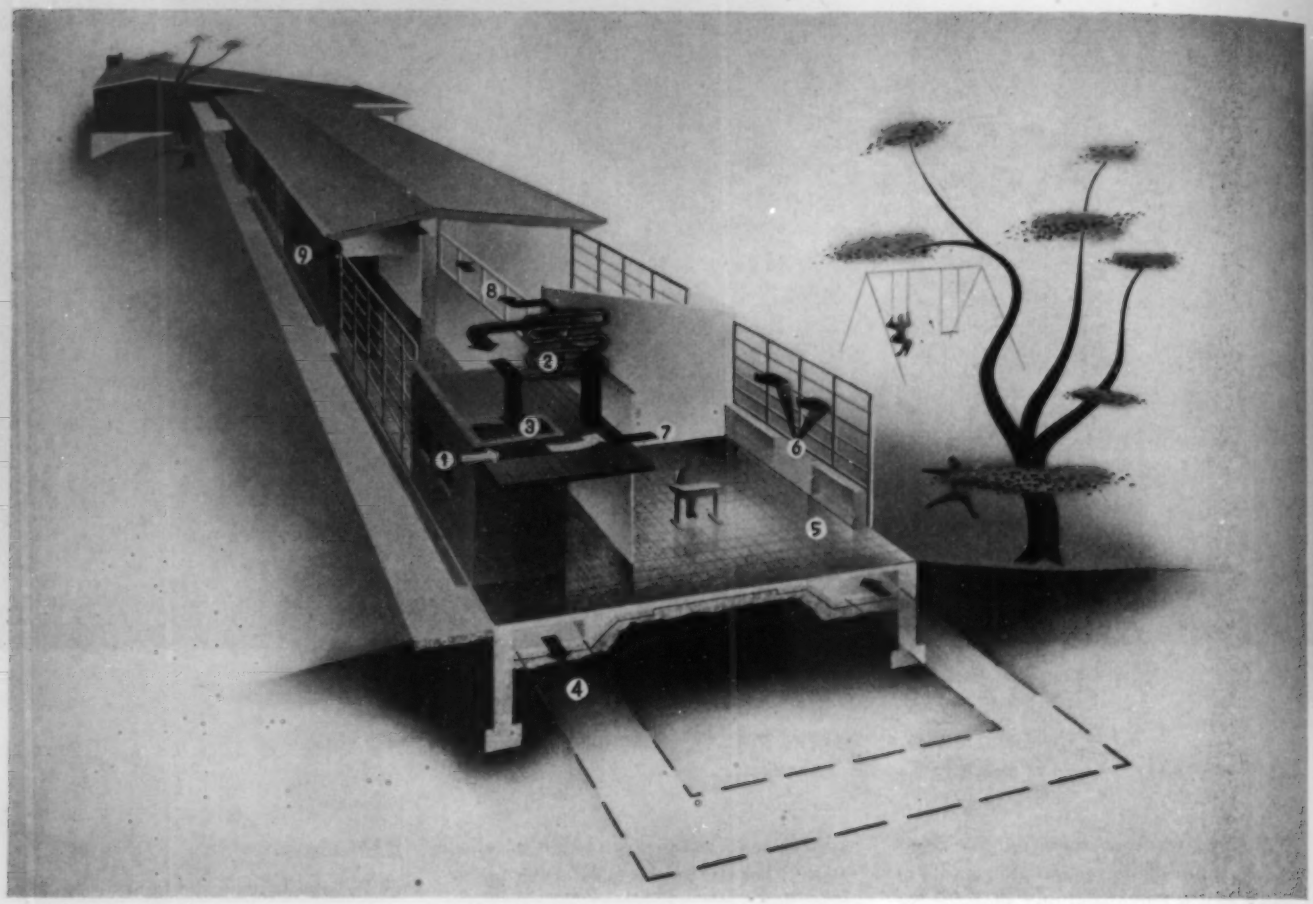
located in front of the windows. Half of the room air is recirculated and the other half is exhausted and replaced by outside air. In classrooms, supply grilles are centered under the windows, with bookshelves on both sides.

The architects, commenting on this system — lowest in cost of those studied — say that the unit ventilators available were designed for groups of 30 students, and thus oversized for this school where classrooms are for 15. The unit ventilators also require a space of about 20 in. deep, while the duct used needs only 9 in.

Lighting

To supplement daylighting in classrooms, recessed and louvered incandescent fixtures were installed near the ceiling for indirect light (see detail and diagram, page 183).

The final plan (bottom, facing page) shows how multiple use of corridor and other areas provided such a large proportion of educational space. In photo at right can be seen the alcoves for studio and shop in the corridor. Toilet rooms are enclosed by cinder block, also used for other partitions. The ceilings are acoustic plaster for noise reduction



How the heating system operates: 1. Fresh air is taken in above exterior end door. 2. Air is drawn past steam heat coils by the fan. 3. Air leaves coils at 135F. 4. Air passes through concrete duct. 5. Air in duct keeps floor warm. 6. Air is thrown in front of cool glass area. 7. Half of air is recirculated (drawn from near ceiling). 8. Half of air is exhausted from classroom (drawn from near floor). 9. Air is exhausted to the outside

COMBINED RADIANT-HOT AIR HEATING AND VENTILATING SYSTEM

Advantages of System:
No cold panel effects from floor or windows.
No pipes in exterior walls to interfere with doors.
Economical installation and operating costs.
Less bulky window breastings.

Requirements for Ventilation:
A minimum of 30 cu ft of air per minute per occupant.
e-circulation of 50 per cent of air.

Fuel Consumption (1949–50):
11,342 gallons of oil

Architects' Estimated Comparative Costs

1. Conventional Air Conditioning System with Framed Floor.

Distribution Ducts	$ 1,000.00
Exhaust Air System—controls, etc.	13,450.00
Cost of framing floor—excavation	7,500.00 *
Boiler—general—fuel feeders	6,600.00
	$28,550.00

2. Unit Ventilators—radiant coils in Ground Slab.

Unit Ventilators—piping—controls	$ 6,000.00
Pipe trench for condensate	500.00
Radiant piping system; slab insulation	3,190.00
Boiler—general—fuel feeders	6,600.00
Exhaust Air System—controls, etc.	7,000.00
	$23,290.00

3. Unit Ventilators—Framed Floor

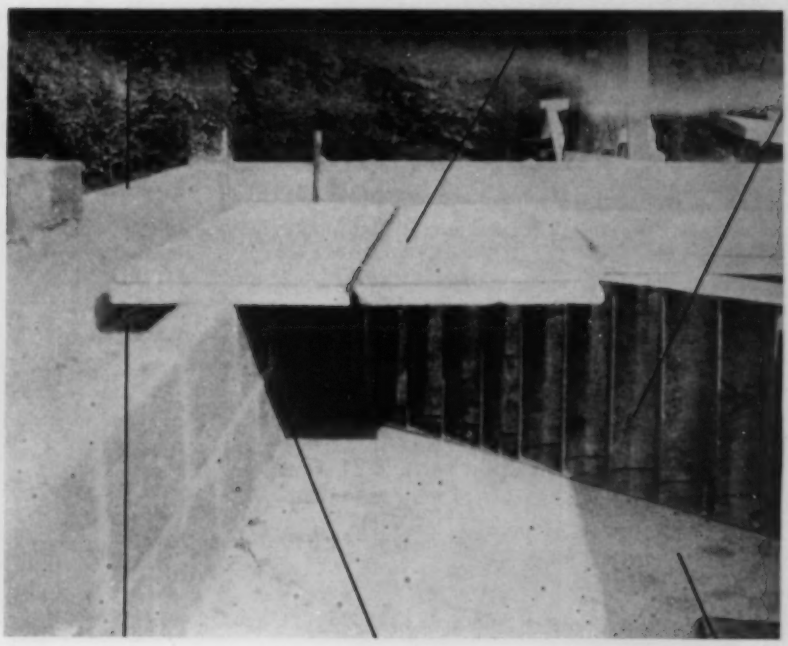
Unit Ventilators—piping—controls	$ 6,000.00
Cost of framing floor—excavations	7,500.00 *
Boiler—general—fuel feeders	6,600.00
Exhaust Air System—controls, etc.	7,000.00
	$27,100.00

4. Circumferential Air Trench under Ground Slab

Cost of concrete duct	$ 2,450.00
Insulation of concrete duct	690.00
Exhaust Air System—controls, etc.	13,450.00
Boiler—general—fuel feeders	6,600.00
	$23,190.00

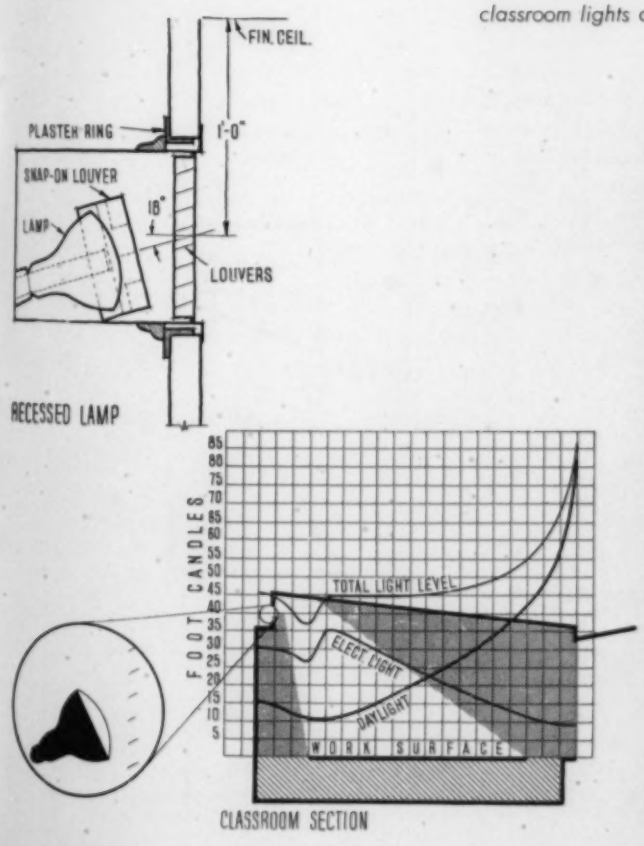
** Amount by which framing and excavation exceed cost of slab on grade*

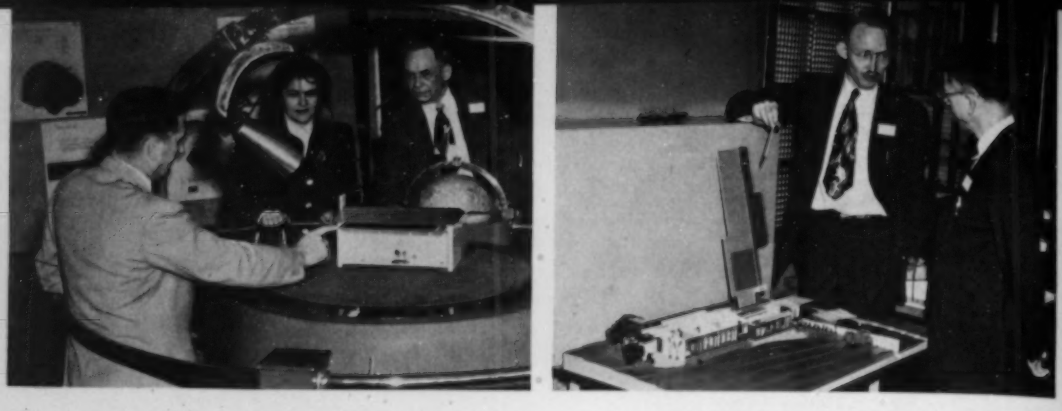
Below: construction of the warm air trench



Recessed lamps are near the ceiling (seen at upper right in photo). Louvers shield the brilliant light sources. Classroom in photo is a large one, bilaterally windowed, and has two rows of five lamps each. Other classroom lights are like section in detail at left

Joseph Molitor photo





Left: members of solar energy Symposium study device which depicts sun angles; left to right, Prof. L. B. Anderson, head of M.I.T. dept. of architecture and chairman of the Symposium; Dr. Maria Telkes, research associate in metallurgy, M.I.T.; and Dr. W. J. Arner, Libbey-Owens-Ford. Right: Dr. Löf, U. of Denver demonstrates model of house for partial sun heating to Prof. Hoyt C. Hottel, M.I.T. chemical engineering

EXPERTS DISCUSS SUN-HEATED HOUSES

ARCHITECTS and engineers who attended the five-day course-symposium on house heating with solar energy at M.I.T. learned how the idea has been working out in the two experimental houses near Boston, and also heard about another one in the blueprint stage.

Dr. Maria Telkes and Eleanor Raymond, architect, collaborators in the construction of a sun-heated house in Dover, Mass. (ARCH. RECORD, March 1949) claimed that their house was heated comfortably without auxiliary heat, except for a short while following a period of nine sunless days last February. It began operation the winter of 1948–49. Now they have plans for a two-bedroom house, 100 per cent sun eated, estimated to cost $10,000.

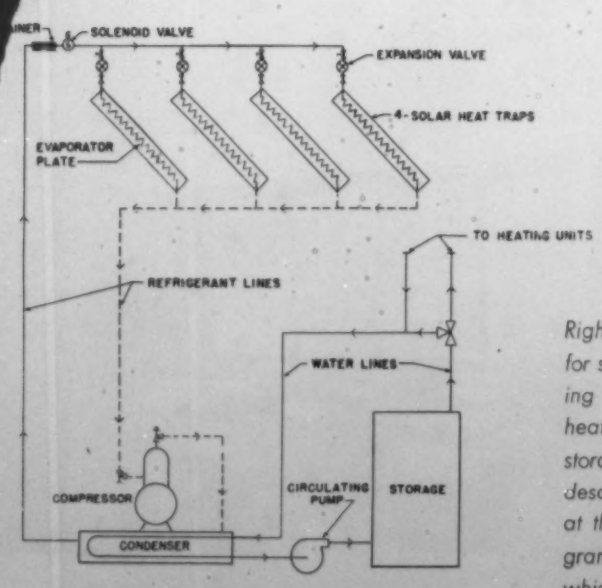
The house built by the M.I.T. solar rgy research project (ARCH. RECORD 1949) was heated 91 per cent by un in 1948–49 and 81 per cent in -50, the remainder being provided ectricity.

The house yet to be built, suitable for construction throughout the southwest, is the result of five years study by Dr. George O. G. Löf, now Director of the Industrial Research Institute, University of Denver. This house, designed by James Hunter, Boulder, Colo. architect, stores the heat in gravel.

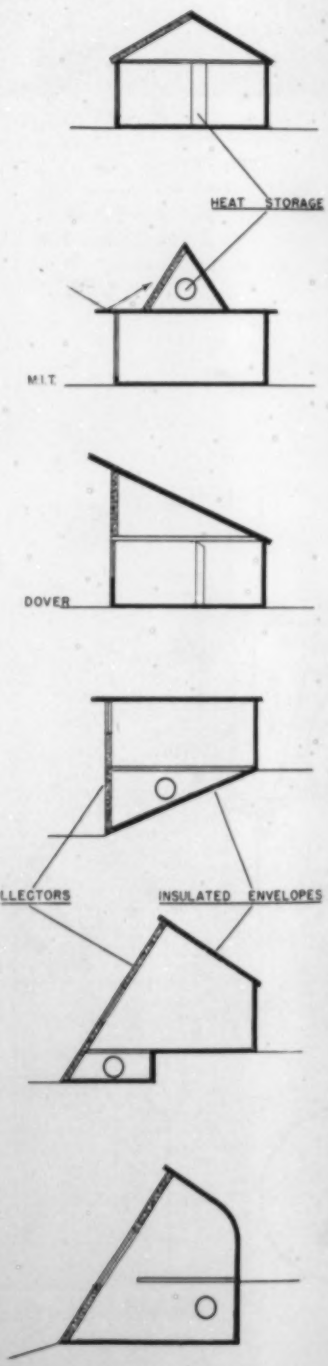
The Dover house stores heat in Glauber's salt, much heat being absorbed as the salt melts.

The M.I.T. house, on the other hand, holds its heat in water.

A significant trend in thinking evident was that if practicality is to be attained soon, and maybe for some time yet, summer cooling should work with the system too. The Dover house took night air this summer to cool the salts so they could keep room air comfortable during the day. The American Gas & Electric Service Corp. has developed a heat pump system which uses the sun for some energy. Dr. Löf is working on an air conditioning system using solar energy.



FLOW DIAGRAM FOR SOLAR HEAT PUMP SYSTEM

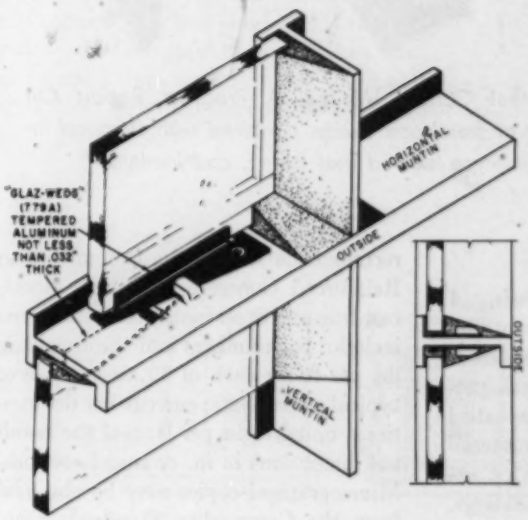


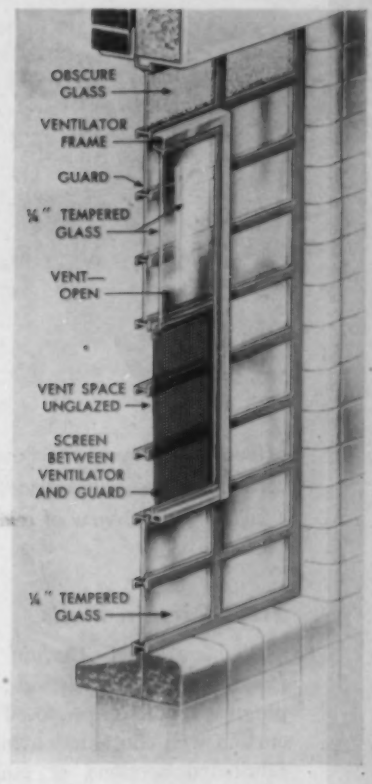
Right: some possible designs for sun-heated houses, showing variations in location for heat collectors and heat storage units, which were described by Prof. Anderson at the Symposium. Left: diagram of heat pump system which uses sun for part of its energy

Detention Windows For Mental Hospitals

The *Bayley Saf-T-Gard Window* is designed to prevent mentally disturbed patients from inflicting intentional or accidental self-injury, or to be unnecessarily aggravated by seeing bars that are separate from the window. The unit has a screened, vertically sliding, ventilator assembly that provides controlled airing, yet does not protrude into room areas. All working parts of the ventilator are concealed. This section is set in a frame of high-strength aluminum muntin bars, spaced 10 in. horizontally by 8 in. vertically, which also contains flanking panes of impact resistant glass. Except for a single row of obscure glass above the ventilator, all panes in the window are clear glass, giving wide-range visibility to the out-of-doors. A special glazing method is used to secure the glass.

The muntin bars cannot be severed or bent without breaking out one or more lights in the glazed portion of the guard. When broken, the glass disintegrates into small crystals without sharp slivers or jagged edges. The units require no painting, and are easily cleaned. Screens, secured between the ventilator and guard, may be removed with special wrenches. Locking devices are available for the ventilators to secure them in closed, intermediate or maximum open positions. These locks can be furnished with keys. The windows are made in a wide range of standard sizes. The William Bayley Co., Springfield, Ohio.





New window for mental hospitals has integral detention grill, provision against self-injury. Top left: typical installation. Right: component parts. Bottom left: detail showing method of holding glass in place

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L. D. Jones Photo

Much of the decorative quality of this church in Mission, Kansas, is obtained by use of glued laminated wood arches

Glued Laminated Wood Arches Integrate Design and Structure

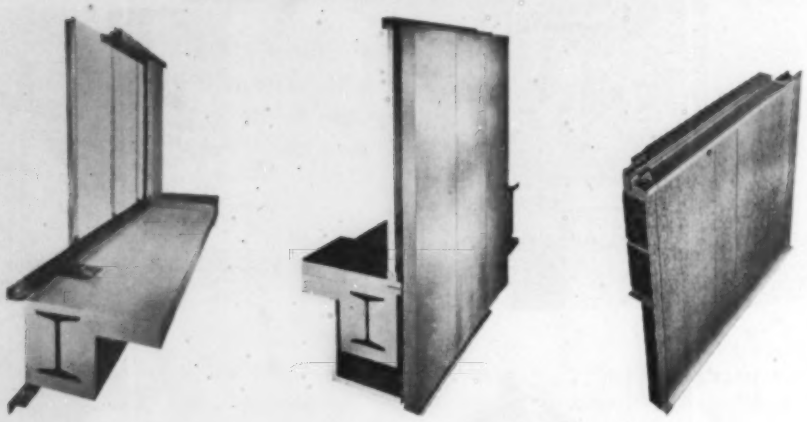
That architectural character can be attained by skillful use of working structural elements, is well demonstrated in St. Ann's Church and School, presented in the August 1950 ARCHITECTURAL RECORD. Architects Kivett & Myers employed *Unit Structures* glued laminated wood arches to achieve a church interior of simplicity and dignity. The arches create an atmosphere well suited to a religious structure; the shapes are akin to traditional associations, yet they are clean-cut in their execution.

Expansion plans of the church call for the eventual conversion of this area into an auditorium-gymnasium. The clear span created by the three-hinged arch roof framing can be adapted easily to this new use. The present chancel will become a stage; removal of pews gives floor space for athletics.

This form of construction lends itself to wide-span areas of any type. It gives a vitality of structural shape, and architectural interest not achieved by surface decoration alone. Unit Structures, Inc., Peshtigo, Wis.

(*Continued on page 252*)

MANUFACTURERS' LITERATURE



Illustrations from Stainless Steel Curtain Walls — A Progress Report On Methods: *left, back and front of metal pan design combined with structural insulation; right, view of reinforcing-type textured steel facing, cast insulation*

Steel Curtain Walls

Stainless Steel Curtain Walls, A Progress Report on Methods. An interim progress report on proposed methods of curtain wall construction in which prefabricated sections of stainless steel sheathing backed by insulating material would replace other materials for exterior walls of multi-storied buildings. Scale drawings illustrate such existing and planned details as facings, insulation, joints, vents, window sections, shapes and textures. The report also includes a discussion of building codes and tests affecting this type of curtain wall construction. 24 pp., illus. Allegheny Ludlum Steel Corp., 2020 Oliver Bldg., Pittsburgh, Penn.*

Plastic Protective Coating

Liquid Plastic Beauty Shield. Booklet describes the features and properties of the Vinylite protective coating for building exteriors and interiors. Tables give recommendations for coating various surfaces, and coverage per gal. Color chips are included for the finishes available. 14 pp., illus. Plastic Coating Corp., P.O. Box 13127, Houston, Tex.

Steel Reinforcing Bars

Simplified Practice Recommendation R26-50, Steel Reinforcing Bars. A revision of a previous pamphlet, based on recommendations of the Committee on Reinforced Concrete Research, American Iron and Steel Institute. Items given include: bar numbers and the weight in lbs per ft for each of 10 sizes; table of typical equivalents; current bar designations, unit weight per ft; and the nominal dimensions in in. or round sections. Mimeographed copies may be obtained from the Commodity Standards Div., Office of Industry and Commerce, Washington 25, D. C.

Textiles and Wall Coverings

Contemporary Hand Printed Textiles and Wall Coverings. Folder's seven sheets illustrate Ruth Adler textile designs (Strata, Swizzles, Germination, Cuneiform, etc.). The pattern repeat and number of colors in each design are indicated. 7 pp. illus. Ruth Adler, 9842 12th St., Detroit 6, Mich.

Stud Welding

Stud Welding. Booklet explains the stud welding method of fastening, describes the equipment and its principal uses, and gives stud locating procedures and other data. Tables, diagrams and photographs are included. The article is reprinted from the chapter on stud welding from the third edition of the *Welding Handbook*, published by the American Welding Society. 16 pp., illus. Nelson Stud Welding Div., Morton Gregory Corp., Lorain, Ohio.

Checking Floor Hinges

Pilco Checking Floor Hinge. Booklet describes the component parts and performance characteristics of the hinges. Various types are listed, along with notes on the selection of hinges to cope with abnormal opening factors. Directions are included for setting and adjusting the speed of operation of the hinges. 16 pp., illus. Pittsburgh Plate Glass Co., 632 Duquesne Way, Pittsburgh 22, Penn.*

Vermiculite

Vermiculite Handbook. Booklet discusses features of vermiculite aggregates used in plaster and concrete. Photographs show typical construction examples. Recommended mixtures for various uses are given. Charts and tables give factors for sound absorption, conductivity, compressive strength and weight. 12 pp., illus. Southern Vermiculite Co., Franklin, N. C.

Outdoor Lighting For Plants

Outdoor Lighting (Illumination Specific No. S-3-50). Discusses outdoor lighting for the various elements and environs of industrial plants. Many details and layouts illustrate the text. A section is devoted to specific lighting units, with photographs, details, light distribution curves and specification tables. 20 pp., illus. Holophane Co., Inc., 342 Madison Ave., New York, N. Y.

Construction Films

Construction Films. Booklet lists motion picture films that are available for meetings and programs of those in the building field. Complete directions for ordering all films are listed.

Through its member companies, the Producers' Council also has other program material of informative nature available for meetings of architects, architectural students, builders and contractors. The Producers' Council, Inc., 815 Fifteenth St., N. W., Washington 5, D. C.

(Continued on page 280)

* *Other product information in Sweet's File, 1950.*

WORKING HEIGHTS FOR SCHOOL CHILDREN: 1

Prepared by Engelhardt, Engelhardt and Leggett, Educational Consultants

A chart of working heights of children is only a general guide to acceptable working conditions. The following chart shows an average situation. There are definite and large variations from this median range both within the classroom group and for different geographical sections of the country and even in differing sections of a city.

In places where groups of children work, there is a great need for flexibility in working heights. In a study [1] of heights of school children in kindergarten and first grade with an age span of one and one-half years, there was a height range from 39 to 54 in., with a median height of 47.4 in. Children of the same height can be found in grades one to six.

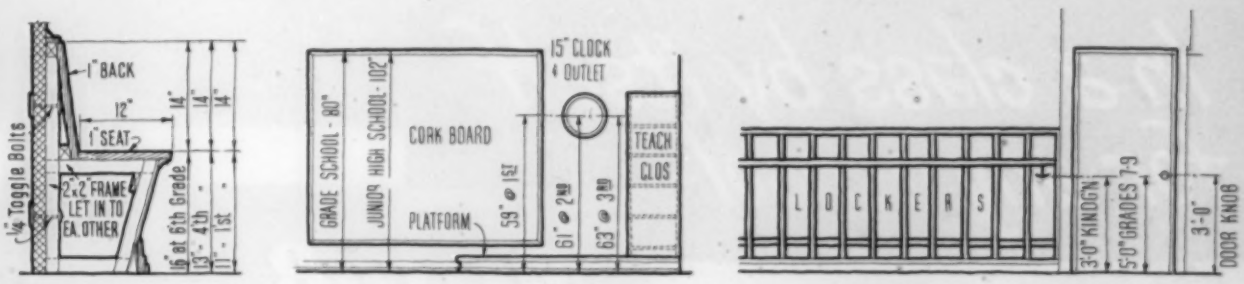
The architect, in planning working facilities for children, will do well to understand fully the variations from child to child in the group with which he must deal. He must also obtain information regarding the median heights of the group with which he must work in order to determine whether that group varies from the group on which this chart is based.

For purposes of comparison, summary data regarding heights of children on which the chart was based is given at right:

STANDING HEIGHT — MEDIAN AND INTERQUARTILE RANGE — KINDERGARTEN THROUGH GRADE SIX — 2560 PUPILS [1].

Grade	No.	Q_1	Median (in inches)	Q_2
K	342	43.2	44.8	46.3
1	445	45.9	47.4	48.8
2	370	47.9	49.5	51.3
3	378	50.7	52.3	53.9
4	367	52.7	54.8	56.6
5	358	55.7	57.5	59.5
6	300	57.3	59.5	61.5

[1] *Bowman, Lillie.* **Standing Heights of Elementary School Children.** *Bureau of Research San Francisco Public Schools, June 1949.*



Typical classroom details used by Engelhardt, Engelhardt and Leggett. Left: built-in bench. Center: wall elevation with cork board and clock. Right: wall elevation with lockers, coat hooks and door. Height variations are indicated for different children's age groups

CHART I — HEIGHTS OF EQUIPMENT *(All heights given in inches)*

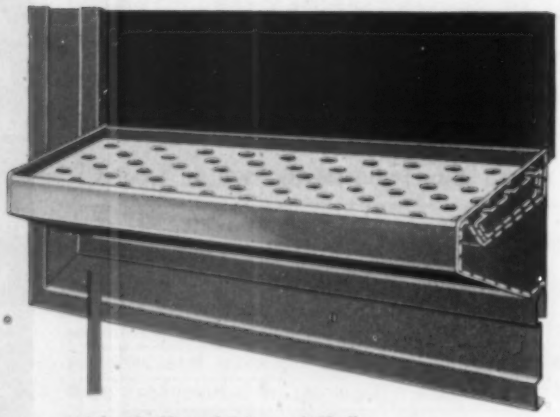
GRADE IN SCHOOL	K'D'G	1–3	4–6	7–9	10–12	SHOP (Jr)	SHOP (Sr)	LAB (Jr)	LAB (Sr)
Benches, Cafeteria	14–17	14–17	14–17	17	18½				
Chairs	11–13	11, 13, 15	13, 14½, 16	16, 17¼	18				
Desks, Classroom			25, 27, 29	28, 30	31				
Desks, Typing				26	26				
Easels	48, 60, 72 to be adjustable for in-between children								
Ht. Meas. Device	60	60							
Pencil Sharpener	32	36	44	48	48	48	48	48	48
Screens, Folding	48	60	72	78	78	78	78	78	78
Seats	12	12–14	14–16	17	18	17	18	17	18
Stools	6	12	18	24		24, 27	27, 30	24	24
Tables, Cafeteria	23–28	23–28	23–28	28	31				
Tables, Classroom	19	19, 22, 25	25, 27, 29	28, 30	31	30	31	30	31
Tables, Drawing	24	26–30	30–32			36	38		
Tables, Work	24	26–30	30–32	30–32	32	30–32	32	35	35

Milcor steel moulding and chalk trough (sound-proofed with Insulmat) form a typical modern class room unit. Note top and side panels devoted to bulletin boards.
Milcor Blackboard Trim was utilized on this unique installation mounted as panels on folding doors.

Warrendale School, Waltham, Mass.
Thomas Worcester, Inc., Architects

In a class by itself for any school-

MILCOR* Chalk Trough and Blackboard Trim



Milcor Blackboard Trim and Chalk Trough are available in a complete variety of moulds, sizes, and types to meet every requirement. Complete fittings to match. All chalk trough furnished with sound-deadening Insulmat backing.

Safety, service, and sanitation are the key words for school design. That's why Milcor — the outstanding leader in the fireproof construction field — is a natural for your projects.

There's a Milcor steel building product that is ideal for most every interior detail. Chalk trough and blackboard trim are prime examples. From the wide variety of Milcor moulds and fittings you can select the exact combination you need for any design you have in mind. All trim is made from 20-gauge steel, gray primed, in 10-foot lengths; comes complete with installation screws.

Simplify your job of designing and specifying. Standardize on one source for modern fireproof construction — the complete Milcor Steel Building Products line!

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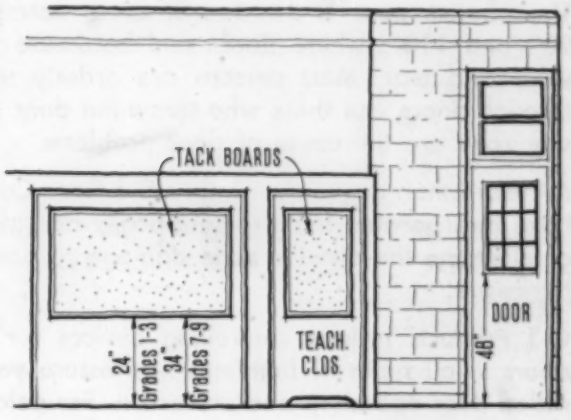
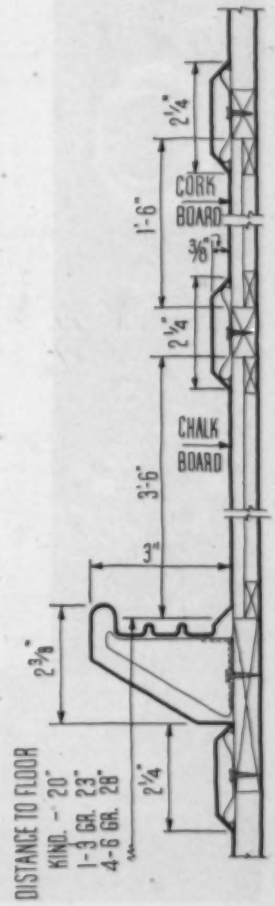
WORKING HEIGHTS FOR SCHOOL CHILDREN: 2

Prepared by Engelhardt, Engelhardt and Leggett, Educational Consultants

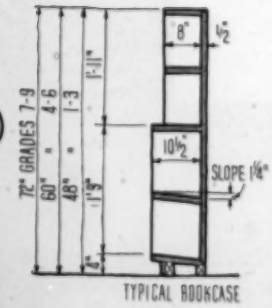
CHART II—HEIGHTS OF BUILT-IN FIXTURES *(All heights given in inches)*

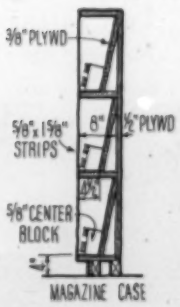
GRADE IN SCHOOL	K'D'G	1–3	4–6	7–9	10–12	SHOP (Jr)	SHOP (Sr)	LAB (Jr)	LAB (Sr)
Cabinet, Bks. & Mags.	42	48	60	72	72	72	72	72	72
Cabinet, Display—Top	54	58	60	70	84	70	84	70	84
(Storage below) Bottom	24	28	30	34	36	34	36	34	36
Cabinet, Stor. & Supp.	72	72	72	84	84	84	84	84	84
Chalk Board—Top	56	56, 59	70, 72	80	84	80	84	80	84
—Bottom	20	20, 23	28, 30	34	36	34	36	34	36
Chalk Rail	20	20–23	28–30	34	36	34	36	34	36
Counter, Work	28	30–34	36	38	42	38	42	38	42
Counter, Cafeteria	30	30	30	36	38				
Counter, Cat. (Home Sch.)	26	26							
Fire Ext. (Tank Type)	To be recessed at baseboard height								
Hook, Coat (Toilet Stall)	36	38–44	46–54	60	60				
Hook Rail, Coats & Hats	36	38–44	46–54	60	60	60	60	60	60
Lockers, Clothes & Books	44	46–52	54–62	36, 72	36, 72	36, 72	36, 72	36, 72	36, 72
Mirror (Lower Edge)	30	32–36	38–42	42	45	42	45	42	45
Shelf, Books (Toilet Room)			48	48	48				
Shelf, Books (Toilet Stall)			48	48	48				
Shelf, Hat & Lunch Pail	42	48	52						
Rail, Directional	24	30	34	34	34	34	34	34	34
Rail, Stair Hand	30	30	30	30	32				
Tack Board—Top	80	80	80	80	102	80	102	80	102
—Bottom	20	24	24–30	34	36	34	36	34	36

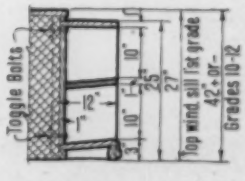


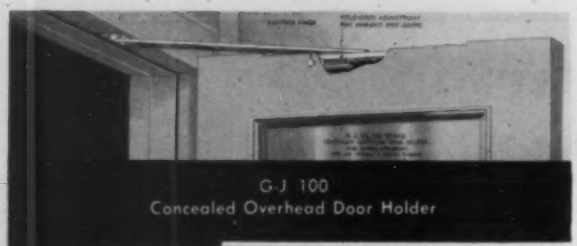


Typical classroom details. Top right: wall elevation with indicated heights for tack boards and glass door panels. Far right: detail of combination chalk and tack board. Below: three typical cabinets. Below right: window sill with built-in bookcase

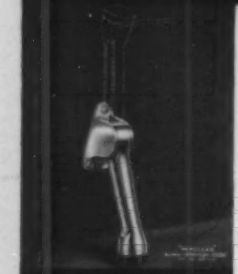




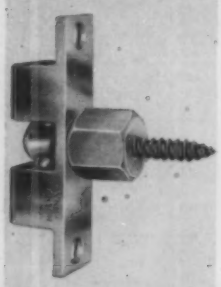




G-J 100
Concealed Overhead Door Holder



G-J No. 4
Hercules Door Holder



STOP *Abusive Zone* DANGERS

with G-J Door Controlling Devices

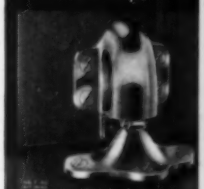
In many cases when a door is carelessly thrown open, it enters the abusive zone.

The abusive zone is the danger area, normally between 90° and 110°, where doors and hardware receive their wear and tear. Most persons are orderly when passing through doors, but those who throw the door into the abusive zone are the cause of door problems.

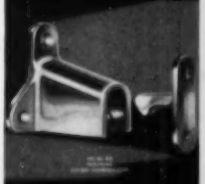
For more than a quarter century G-J Door Control Devices have incorporated features specifically designed to reduce or eliminate the abusive zone damage to doors and their hardware.

G-J Products include controlling devices for all types of doors in all types of buildings and assure years of unexcelled door operation and protection. For detailed description and applications refer to the G-J catalog.

G-J F-9
Door Holder
and Bumper

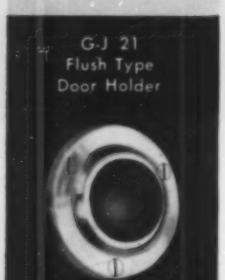


G-J F-40
Door Holder
and Bumper

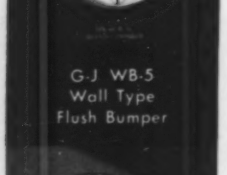


G-J W-40
Door Holder
and Bumper

G-J F-20
Door Holder
and Bumper



G-J 21
Flush Type
Door Holder



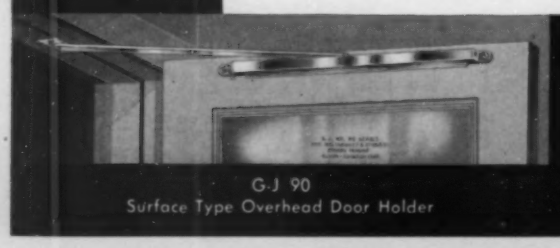
G-J WB-5
Wall Type
Flush Bumper

G-J FB-13
Dome Type
Door Bumper

GLYNN-JOHNSON CORPORATION

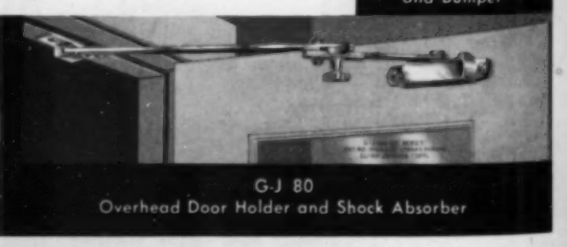
4422 N. Ravenswood Avenue

Chicago 40, Illinois



G-J 90
Surface Type Overhead Door Holder

MERIT CHARACTER CORPORATION DISTINCTION



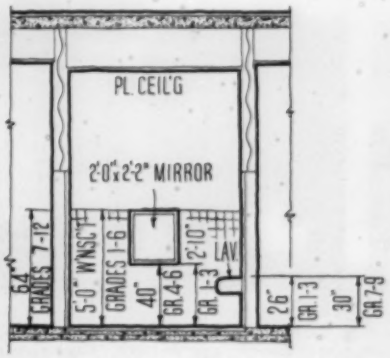
G-J 80
Overhead Door Holder and Shock Absorber

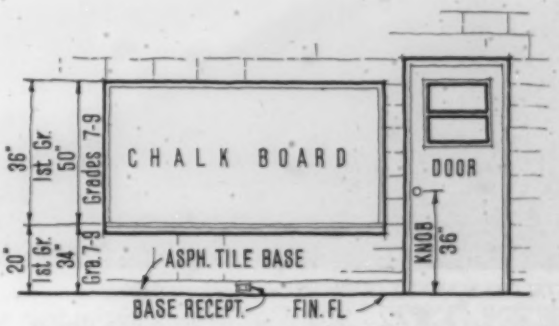
WORKING HEIGHTS FOR SCHOOL CHILDREN: 3

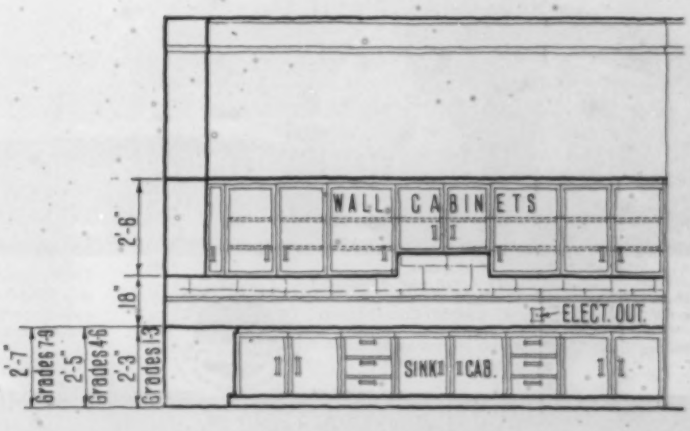
Prepared by Engelhardt, Engelhardt and Leggett, Educational Consultants

CHART III—HEIGHTS OF BUILDING APPURTENANCES *(All heights given in inches)*

GRADE IN SCHOOL	K'D'G	1–3	4–6	7–9	10–12	SHOP (Jr)	SHOP (Sr)	LAB (Jr.)	LAB (Sr)
Door Knobs	36	36	36	36	36	36	36	36	36
Door, Glass Panels	48	48	48	48	48	48	48	48	48
Drinking Fountain	24	24–26	31	32	34	32	34	32	34
Elec. Receptacles	24, or 6 in. above a counter for all grades								
Lavatories	23	25–27	27	30	30	30	30	30	30
Light Switches	36	48	48	50	50	50	50	50	50
Panic Bar	30	30	30	36	36	36	36	36	36
Sinks	25	26–28	28–30	31	32	31–35	32–35	31–35	35
Soap Dispenser	34	40	44	44	44	44	44	44	44
Stair Risers	6	6	6	6	6	6	6	6	6
Telephone		36–40	48	60	60	60	60	60	60
Toilet Stalls	42	60	60	64	64	64	64	64	64
Towel Dispenser	40	40–46	48	54	60	54	60	54	60
Urinal		36 (Base raised 3 in. off floor)	36	36 (← 4 in. off floor →)	48	36	48		
Wainscot, Assembly	54	54	54	60	60				
Wainscot, Corridor	54	54	54	60	60				
Wainscot, Toilet	42	60	60	64	64	64	64	64	64
Water Closet	12	12–14	16	16	16	16	16	16	16
Window Ledge	27	27	33±	33±	42±	33±	42±	33±	42±







Typical classroom details. Above: section through washroom, with heights indicated for wainscoting, mirror and lavatory. Above right: heights of chalk board and door knob on typical wall elevation. Below right: arrangement of sink and wall cabinets.

AMERICAN-Standard

First in heating . . . first in plumbing

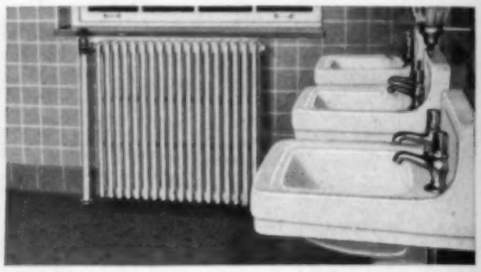
These modern schools rely on AMERICAN-Standard

In many respects these schools are vastly different. They're located in widely separated sections of the country. They're different in size. And they're different in architectural design. However, like hundreds of other fine educational institutions, they're in perfect agreement as to the best heating equipment and plumbing fixtures to use: they're *all* American-Standard equipped.

In schools all over the country American-Standard Heating Equipment and Plumbing Fixtures have proved to be efficient, dependable, easy-to-maintain, even under the most rugged service conditions.

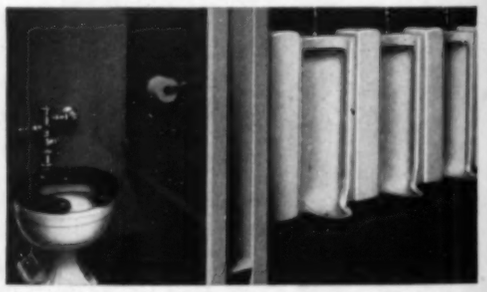
When you build or remodel *your* school, ask your Heating and Plumbing Contractor about American-Standard Heating Equipment and Plumbing Fixtures—long the choice of schools and public buildings everywhere. There's a complete line of products to choose from. **American Radiator & Standard Sanitary Corporation,** P. O. Box 1226, Pittsburgh 30, Pennsylvania.

JULIAN CURTISS SCHOOL, Greenwich, Connecticut.
Architects: W. B. Tubby, Coffin & Coffin, & Philip N. Sunderland, Inc., Associated Architects.
Heating and Plumbing Contractor: Hauxwell & Smith, Inc.
Wholesale Distributor: Center Heating & Oil Supplies Co.



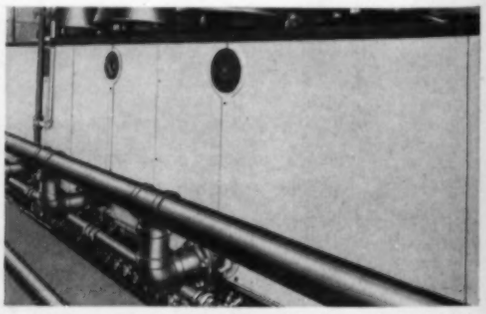
In the Julian Curtiss School this compact, slim-tubed **ARCO LEGLESS RADIATOR** provides exceptionally quick heating. The **LUCERNE LAVATORIES** feature deep, square bowls and splash backs, and are made of durable genuine vitreous china.

MONTECITO ELEMENTARY SCHOOL, Martinez, California.
Architects: Bamberger & Reid, San Francisco
Heating and Plumbing Contractor: Morrill Plumbing & Heating, Oakland



This neat rest room of the Montecito Elementary School is equipped with the **DEVORO WATER CLOSETS** and **CHINA URINALS.** Of genuine vitreous china these fixtures are non-absorbent, easy to clean. Flushing action is fast and thorough.

ROSEDALE SCHOOL, Denver, Colorado
Architects: Raymond Harry Ervin and Associates
Mechanical Engineers: Marshall & Johnson
General Contractor: E. L. Hobbs Construction Company
Plumbing Contractor: Grabb Plumbing & Heating Company



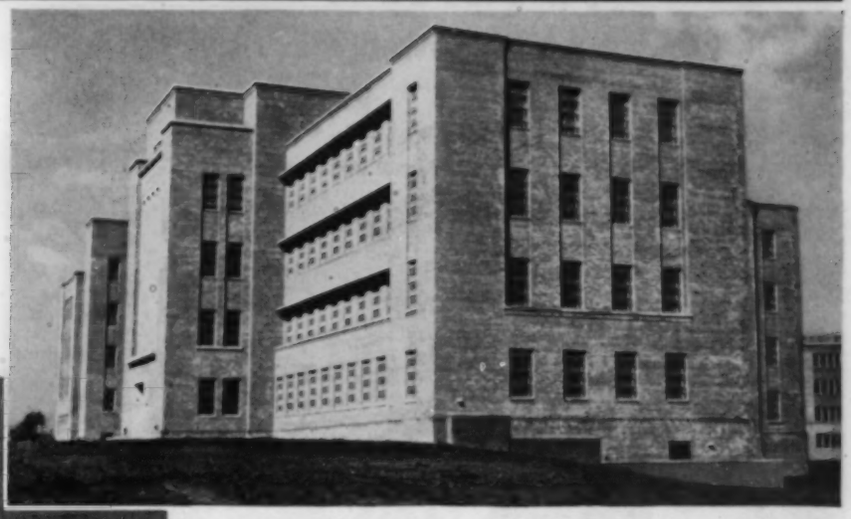
Steady and adequate heat is automatically supplied the Rosedale School by this **STANDARD GAS BOILER.** Heating surfaces, burners and controls are all coordinated to give maximum heat output with minimum operating and maintenance costs.

Serving home and industry

AMERICAN-STANDARD · AMERICAN BLOWER · CHURCH SEATS · DETROIT LUBRICATOR · KEWANEE BOILERS · ROSS HEATER · TONAWANDA IRON

AMERICAN-Standard

First in heating . . . first in plumbing



Architects:
The Pepper Associates

Mechanical Engineers:
Moody & Hutchinson

General Contractor:
Wark & Company

Plumbing Contractor:
C. E. Williames Co., Inc.

Wholesale Distributor:
Hajoca Corporation

Hydrotherapy treatment room at the Philadelphia State Hospital, showing battery of Prolonged Treatment Baths. The automatically-controlled baths are made of rigid cast iron and finished inside with a heavy coating of acid-resisting enamel. The wall-supported fixtures in background are the Cardic Drinking Fountain, Buena Lavatory and Instanto Water Closet. All are made of genuine vitreous china that is easy to clean, and *keep* clean.

Philadelphia State Hospital selects AMERICAN-Standard *fixtures for new Active Therapy Building*

■ Dependable, trouble-free plumbing is assured the new Active Therapy Building of the Philadelphia State Hospital. It is equipped throughout with American-Standard Plumbing Fixtures.

In specialized hospitals like this, as well as in countless general hospitals all over the country, American-Standard Heating Equipment and Plumbing Fixtures have *proved* their durability and dependability in service. And they've proved to be easy and economical to maintain too.

American-Standard products are designed to conform to the most modern hospital techniques . . . they are built for utmost convenience of hospital attendants, and for utmost comfort of patients. These quality products are made in a wide variety of styles and sizes to fit any installation condition . . . to meet the most exacting hospital requirements.

When you build or remodel *your* hospital, be sure to check the complete American-Standard line. Your Heating and Plumbing Contractor is familiar with these reputable products and will gladly help you select the right heating equipment and plumbing fixtures for your particular needs. **American Radiator & Standard Sanitary Corporation,** P. O. Box 1226, Pittsburgh 30, Pennsylvania.

The smooth, non-absorbent surface of this genuine vitreous china Surgeons' Scrub-up Sink will withstand unusually hard service. The deep bowl and splash back of the sink limit splashing. Wrist-control mixing valve makes it easier to use.

Serving home and industry

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ARRAZIN! *Say it again!* ARRAZIN!

It's the *Original* longer-wearing Vinyl Carpeting!

4 years of development and research! . . . 4 years of gruelling wear tests! . . . that's what stands behind every yard of ARRAZIN, the original vinyl plastic carpet for longer wear, easier maintenance—mounted on sponge rubber for added comfort and quiet! Yet ARRAZIN retains all the beauty of broadloom carpeting! It's the Magic Carpet for Heavy Traffic Areas!

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FREE! Samples of amazing ARRAZIN! Information showing how to solve the problem of heavy traffic areas! Clip this coupon!

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Flooring Division
WATERTOWN, MASS

THE RECORD REPORTS

WASHINGTON

(*Continued from page 26*)

ous three months. It said the tighter lending regulations were having little effect in August and prophesied only a limited effect in the fourth quarter of the year. Third quarter consumption estimate was placed at 11,594 million board feet. This would top the second quarter by 296 million board feet. Western production and shipments were hampered by the worst freight car shortage in years. Inventories were broken and unbalanced, with many popular items almost depleted, the group said.

• The Prefabricated Home Manufacturers Institute reported that 27 per cent of Wherry Act housing being erected in the military housing program was prefabricated; 2800 of the 10,200 units under way. The Institute considered the unusually good showing an indication of the worth of factory-produced housing.

• The latest Federal Reserve Board bulletin said that while construction of schools and other educational buildings has increased considerably, additional schools still are needed in very large volume because of the sharply increased school population. It predicted that work in most fields of public construction will be affected substantially by the national defense program. On the school need, Oscar R. Ewing, Federal Security Administrator, said recently: "We spend much time, much thought and much money to improve the conditions under which the vast industrial production of America is generated. Yet, in our school houses — the fountainheads of ideas and knowledge in which we generate the citizenry of America — we have let the plant run down. . . . We are short-changing our own children."

• The American Gas Association estimated that more than 3 million house heating customers will be added to the present consumer list by the 1952–53 heating season. There now are 7,217,000 residences heating with gas. Nearly half of the anticipated new gas heating connections will be made during the season immediately ahead. This means 9.4 million residential gas customers, or more

(*Continued on page 198*)

IMPORTANT CONSIDERATIONS

for the Architect about to recommend A SCHOOL TIME AND PROGRAM SYSTEM

FIRST, let's define the function:

A School Time and Program System has two primary functions: (1) to give the correct time in each classroom, and (2) to sound signals at pre-determined intervals. It must work automatically 5 days a week (often longer), in buildings jam-packed with kids and staffed by teachers and a principal who have neither the time nor the inclination to fuss with complicated gadgets.

SECOND, let's examine the features:

The installation consists of a Master Clock — Program Controller with Secondary Clocks and Buzzers in classrooms (bells elsewhere). In order to function smoothly the system should have these advantages:

1 Master Clock-Program Controller must be "on time" together at all times. In the STANDARD System they are one and the same mechanism, geared together. They can never get "out of step."

2 Master Clock and Secondary Clocks must also reveal exactly the same time.

In the STANDARD System there is only one synchronous motor — a heavy-duty, slow speed, precision-built unit located in the Master Clock. Secondary Clocks have no motors, electrical contacts, tubes or other complicated parts — require no cleaning, oiling, adjustment or renewal.

Other synchronous systems have one or two motors in each secondary clock and 1, 2 or 3 motors in the control unit where the failure of one disarranges the entire system.

3 The Master Clock-Program Controller should keep running during current interruptions, so that when current is resumed the signals will sound on time.

In STANDARD Systems this is accomplished without a catching-up-to-time period — and without the use of batteries which require frequent attention or renewal.

4 Each Secondary Clock should reset itself automatically after current failure.

In STANDARD Systems each clock has a 25-minute corrective range (slow or fast) and the reset feature functions in two seconds, silently. In certain other systems the Secondary Clocks must be reset in groups.

5 The Program Controller should cover all the programming needs of the entire school. This means complete service with periods down to the minute, and silence during nights, weekends, etc.

Furthermore, it must be so simple that anyone can set up a program in a few minutes, and change schedules at a moment's notice.

STANDARD employs a special paper tape, marked in minutes and hours, and punched by the Principal according to the schedule desired. Spare tapes, with different schedules, can be installed in a few seconds when necessary. The tapes will last 15 years or longer, and are free.

Other systems employing lugs, pins, cams, etc., are not only difficult to set up, but are subject to failure when pins drop out or break off.

6 For best performance and long-range economy, engineers agree that the wiring system for a clock and program service should be kept separate from light and power lines.

7 The system should be backed by years of dependable operation in schools under all conditions.

STANDARD can produce ample evidence of dependable performance in case histories running back to the turn of the century.

We shall be pleased to send you our new Bulletin No. 178, and to provide you with names of satisfied users to whom you may refer. Perhaps we can also assist you in preparing specifications for your time and program system. Please get in touch with us.

STANDARD ELECTRIC TIME COMPANY

STANDARD

25 Branch Offices

81 Logan Street Springfield, Massachusetts

EASTGATE APARTMENTS

DRIVE-IT "300" *cuts fastening costs 50% on Big Boston Apartment Job!*

Over 9000 drive-pins were used at the Eastgate Apartments to fasten ceiling runner channels to concrete "at a saving of over 50%" writes the contractor.

Drive-It is one of the greatest cost-cutting tools ever invented. Hundreds of letters attest to the fact that steel or wood to concrete or steel fastening can be done with Drive-It *at savings of 50% to 85% in man-hour costs!*

Every architect, building engineer and contractor should investigate the DRIVE-IT system of fastening. It is Underwriter Laboratories approved for efficiency and holding power and engineered for *super-safe* operation.

Clip the coupon below and let us tell you how you, too, can save *safely* with DRIVE-IT!

Distributors Coast to Coast
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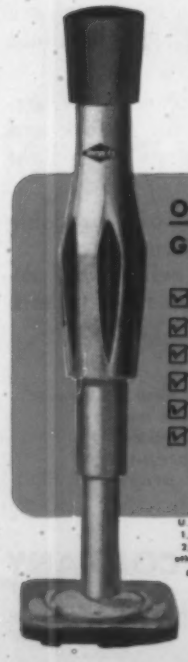
0725 S. W. Woods Street Portland 1, Oregon
(Canadian Distributor:) Ammo Power Tool Co., Ltd.
Foot of McLean Drive, Vancouver, B. C.



DRIVE-IT "300"

U. S. Pat No. 1,984,117; 2,400,878 other patents pending

ONLY DRIVE-IT "300" GIVES YOU ALL THESE FEATURES

- ☑ Controlled power with one power charge
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POWDER POWER TOOL CORPORATION, 0725 S. W. WOODS STREET, PORTLAND 1, OREGON

THE RECORD REPORTS

(*Continued from page 196*)

than 40 per cent of all units now supplied with gas utility service, are expected to heat with gas during the coming winter.

• The Army Corps of Engineers is resuming its underground explosion tests. These were suspended for lack of money after a series was run in the summer and fall of 1948. The new tests will be made at Dugway Proving Ground, near Salt Lake City, Utah, at Buckhorn Wash, near Price, Utah, and in Unaweep Canyon, south of Grand Junction, Colo. The tests are designed to show the effects of T.N.T. charges of varied forces on underground structures. At the same time they give a clue to design criteria for future structures and tunnels.

• An official announcement by the Army Corps of Engineers held its current fiscal year lumber needs to around 1.5 billion board feet. This was done in an effort to help stem the tide of rising lumber prices. The rumor had gotten around that the military services, for whom purchases are acquired by the Army Engineers, would begin stockpiling huge quantities of lumber for defense purposes. Six billion board feet was the figure mentioned. But the Corps said this was not true. Spokesmen for the lumber industry advised the Army there is no existing shortage in the lumber market.

ON THE CALENDAR

Current through Oct. 29: Exhibition House, Gregory Ain, Architect — garden of the Museum of Modern Art, 11 W. 53rd St., New York City.

Current: "Good Design," examples of modern design in home furnishings in an exhibition jointly sponsored by the Museum of Modern Art, New York City, and The Merchandise Mart — The Merchandise Mart, Chicago.

Current through Nov. 1: First Annual Exhibition, Society of Contemporary Designers — California State Exposition Bldg., Los Angeles, Calif.

Current through Nov. 5: Work by Skidmore, Owings and Merrill, Architects; models, photo-murals, plans of new buildings, including Lever Brothers,

(*Continued on page 200*)

STATE-MADISON BUILDING

Chicago, Illinois

L. J. Sheridan & Co., Agents
Leo J. Sheridan, President
Frank C. Wells, V. P., and Gen. Mgr., State-Madison Bldg.
Waldemar Karkow, V. P. and Eng.

•

Holabird & Root & Burgee, Architects

•

Geo. A. Fuller Co., Gen. Contractors

OTIS PLANNING

helps make huge conversion a success

with AUTOTRONIC ELEVATORING

Leo J. Sheridan, president of the company that conceived and supervised this major project, states, "There was never any guesswork about the elevatoring."

Otis engineers studied this project right from the start. They helped to determine that 11 AUTOTRONIC elevators, operating in existing hoistways, would make the installation economically sound and provide fast, efficient service.

"There was never any guesswork about elevator operation."

Otis designed and built this installation complete from pit to penthouse. Management and architects alike were confident of its successful operation—because they knew that every detail was being carefully integrated for over-all performance. Further, all construction was completed ahead of schedule. There were no delays in occupancy because of elevator service.

AUTOTRONIC elevatoring, with its automatic supervision and 6 basic traffic patterns, is providing the State-Madison Building with the same fast, dramatic 'touch button' service that is being featured by the best of today's new buildings.

Otis will be equally happy to remove all guesswork from your vertical transportation problems. And without obligation. Contact any of our 263 local offices. Otis Elevator Company, 260 11th Avenue, New York 1, N. Y.

Otis

AUTOTRONIC
Traffic-Timed
ELEVATORING

for finest indirect lighting

lifetime beauty, efficiency

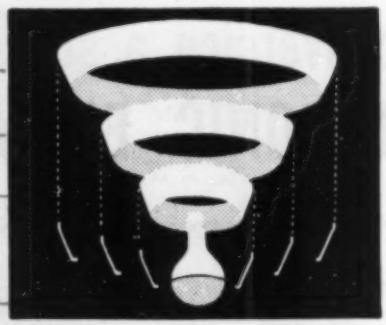
practically *no maintenance*

SPUN ALUMINUM LOUVRES
for distinctive modern design.

HEATPROOF ALZAK** FINISH
is not discolored or affected by lamp heat.

DUSTLESS OPEN BOTTOM
minimizes cleaning — dirt falls through.

SILVERBOWL LAMP
provides built-in reflector. Peak efficiency is *automatically* restored; when lamp is replaced, you have a new reflector.



The functional simplicity and beauty of the GUTH SEELUX make it the standout among indirect incandescent luminaires. Compare these SEELUX specs with *any* similar fixtures:

18-Gauge aluminum, emery-grained ALZAK finish. Concentric spun louvres with 25° pitch, positioned with three die-stamped 12-gauge aluminum straps riveted to each ring. Socket cover, semi-polished ALZAK; 6" canopy, stem and swivel, ALZAK aluminum; black porcelain U. L. approved lampholder.

Have you our Bulletin 864-J with full details on the SEELUX, SEELUX *Plus* and other fine GUTH Incandescent Indirects? It's yours for the asking from

* ® and Patents Pending
**® and Patented, Aluminum Co. of America

Guth LIGHTING
THE EDWIN F. GUTH COMPANY / ST. LOUIS 3, MISSOURI
Leaders in Lighting since 1902

THE RECORD REPORTS

(*Continued from page 198*)

Manhattan House, etc. — Museum of Modern Art, 11 W. 53rd St., New York City.

Oct. 16–19: 17th Annual Meeting, National Association of Housing Officials — Hotel Statler, Detroit, Mich.

Oct. 18–20: Society of the Plastics Industry Annual National Conference — New Ocean House, Swampscott, Mass.

Oct. 23–26: 1950 Convention, Structural Clay Products Industry — Broadmoor Hotel, Colorado Springs, Colo.

Oct. 23–31: General Assembly, The International Council for Building Documentation — Paris, France.

Nov. 3–12: 25th Arizona Arts Exhibition, sponsored by the Phoenix Fine Arts Assn. — Arizona State Fair, Phoenix, Ariz.

Nov. 9–11: Annual Convention, Louisiana Architects Association, and Annual Meeting, Chapter officers of the Gulf States District, The American Institute of Architects — New Orleans, La.

Nov. 12–19: 43rd Annual Convention, National Association of Real Estate Boards, and First Annual National Realtors' Exhibition — Municipal Auditorium, Miami Beach, Fla.

Nov. 22–Jan. 28: "Good Design," an exhibition of the best designs in home furnishings for the year 1950 as chosen by the Museum of Modern Art selection committee — The Museum of Modern Art, 11 W. 53rd St., New York City, and The Merchandise Mart, Chicago.

Nov. 27–Dec. 29: 19th National Exposition of Power and Mechanical Engineering — Grand Central Palace, New York City.

OFFICE NOTES

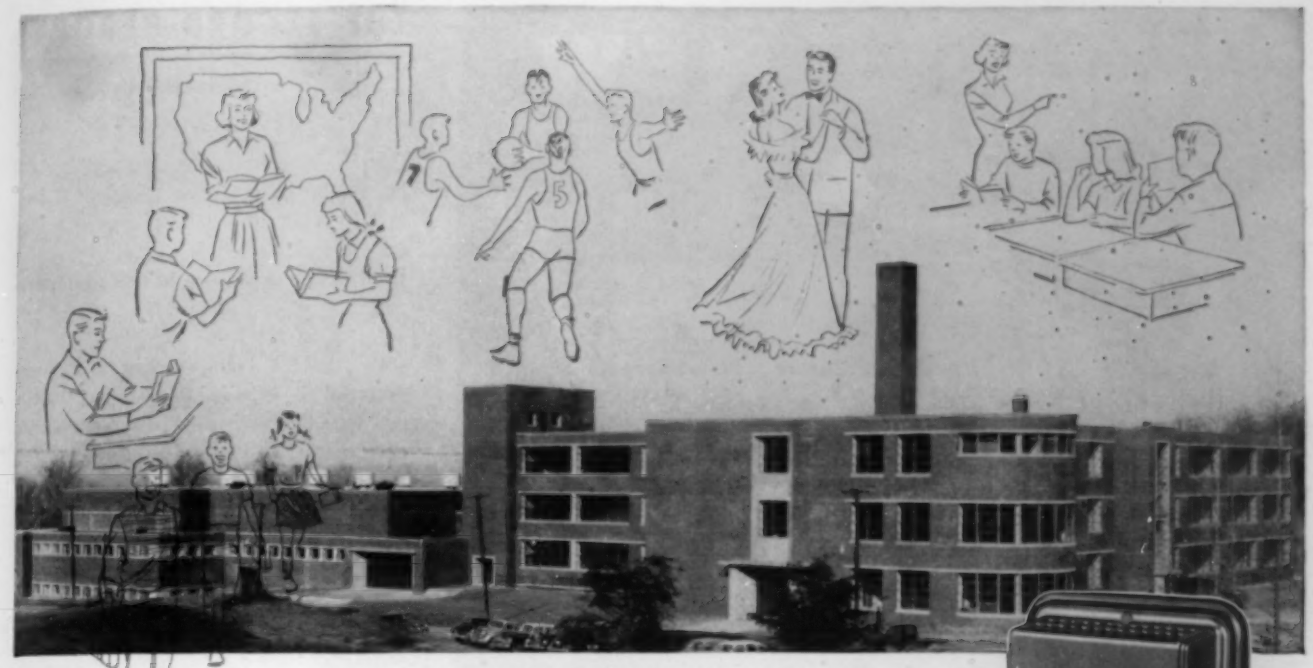
Offices Opened, Reopened

• James A. Britton, A.I.A., who has had his office at 20 Federal St., Greenfield, Mass., has moved into his own office building at 315 Federal.

• Paul B. Coxe, Registered Architect and Engineer, has announced the opening of an office for the general practice of architecture in Room 202, Democrat Messenger Bldg., Waynesburg, Pa.

• The Leo A. Daly Company, Architects, with offices in the Insurance Bldg.,

(*Continued on page 202*)



John Philip Sousa Junior High School,
Washington, D. C. Municipal Architect, Merrill Coe & Staff,
architects and engineers.

the **PROBLEM**

How can the district's newest, finest $1,850,000 immense, brick, steel and glass school building be used to serve the activities of both school and community— during night as well as day . . . and still keep down fuel costs?

Johnson's **SOLUTION**

DUAL CONTROL was developed by Johnson engineers to supply comfort heat in occupied areas and a reduced economy temperature in all unused rooms. Dual Control is a super "automatic brain" for the heating system, engineered to effect tremendous fuel savings.

In the Sousa school, there are 83 *Dual* Room Thermostats operating Johnson valves on 15 convectors and Johnson valves and damper operators in 82 unit ventilators with Johnson *Proper Sequence* Control. A new feature of the Sousa school is the separation of the recreational part of the building from the academic—connected only by a corridor. According to the normally expected usage of the various rooms, the *Dual* control is interconnected in suitable groups: Class Rooms, Cafeteria, Auditorium and Lobby, Offices, Gymnasium, Recreation Rooms. If any room should be occupied when its group has been set for reduced temperature, merely pushing a button on the Johnson *Dual* Thermostat resets that room to normal comfort without heating other rooms in that group.

In hospitals, too, Johnson Individual Room Control for Operating Rooms, Diagnostic and Treatment Areas, Public Spaces, Wards and Patient Rooms.

It is easy to understand how such operation saves fuel. Whatever your temperature control problem may be—large or small—nearby Johnson engineers invite your call. A consultation carries no obligation. JOHNSON SERVICE COMPANY, Milwaukee 2, Wisconsin. Direct Branch Offices in Principal Cities.

JOHNSON *Automatic Temperature and Air Conditioning* **CONTROL**

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OPPORTUNITIES
FOR MODERN DESIGN
Made Possible by
PERMACLAD
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Corrosion Resistant!
Easily Formed or Deep Drawn!
Now architects can design beautiful, high luster doors, panels, building facades, store fronts and ornaments, and be confident that they will retain their mirror-like finish almost forever. Permaclad, the new Stainless Clad Steel has made this possible.
Permaclad combines the surface characteristics of Stainless Steel with the forming qualities of Carbon Steel providing corrosion resistance at decreased cost.
Reduction of weight is possible through the use of AW Dynalloy, high strength, low alloy steel as a backing. When lighter sections are used usually substantial savings can be effected.
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Gentlemen: Please send me more information and Free literature about Permaclad
Name Title
Company
City State
Other Products: A. W. ALGRIP ABRASIVE Floor Plate • A. W. SUPER-DIAMOND Floor Plate • Billets Plates • Sheets • Strip • (Alloy and Special Grades).

THE RECORD REPORTS

(*Continued from page 200*)

Omaha, Neb., have opened another office in the Ambassador Bldg., St. Louis 1, Mo. William Daly will be in charge of the St. Louis office, with Emil Royco as head of the drafting and design departments.

• Lloyd C. Mayers, Architect, has announced the opening of his office for the practice of residential and commercial architecture in Suite 305, Radio Bldg., 2030 16th St. N., Arlington, Va.

• Smith & Hegner, Architects, announce the opening of new offices at 1659 Grant St., Denver 5, Colo.

New Firms, Firm Changes

• Daniel B. Altman, engineer and business consultant, has joined the Kuljian Corp., engineers and constructors, of Philadelphia, as head of its new department of Management Engineering, according to an announcement by James L. Cherry, executive vice president. Mr. Altman was formerly a partner in Hare, Bready & Co., after a number of years as engineering consultant with Day & Zimmerman.

• DeLeuw, Cather & Company, Engineers, of 150 N. Wacker Drive, Chicago, have announced the appointment of Clinton B. F. Brill, A.I.A., A.S.C.E., S.A.M.E., as special consultant, representing the firm in New England and Latin America. Mr. Brill will have offices at 101 Park Ave., New York 17, N. Y.

• William Dean Faint, Registered Architect-Engineer, is the new firm name of W. D. Faint & Co., Professional Engineers. Mr. Faint will continue to have his offices at 1915 Browning Rd., Pennsauken 8, N. J.

• Gordon Ferguson, A.I.A., A.S.C.E., and Donald P. Stevens, A.I.A., announce the formation of a partnership for the practice of architecture under the firm name of Ferguson, Stevens & Beck, with offices at 111 South Amherst, Albuquerque, N. M. and Radio Plaza, Room 10, Santa Fe, N. M.

• The office of Harold H. Hunter, A.I.A., Registered Architect, announces the association of Warren Calvin Howard with Harold H. Hunter under the

(*Continued on page 204*)

Baltimore's giant new

FRIENDSHIP INTERNATIONAL AIRPORT

latest of the postwar super airports equipped with JENKINS VALVES

Architects & Engineers
WHITMAN, REQUARDT-GREINER COMPANY & ASSOCIATES, BALTIMORE, MD.

General Contractors
CONSOLIDATED ENGINEERING COMPANY, BALTIMORE, MD.

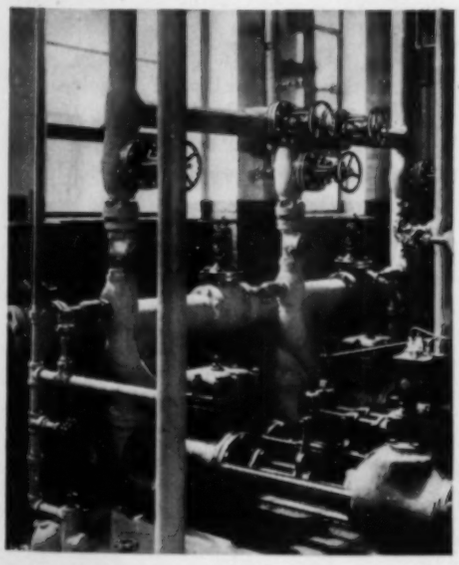
Heating, Plumbing & Air Conditioning Contractor
LLOYD E. MITCHELL, INC., BALTIMORE, MD.

The plane hasn't been built that is too big to land at Friendship International Airport. Nor is it likely to be. For in designing this new 3000 acre giant, formally opened by President Truman on June 24 to serve the Baltimore-Washington area, the keynote was expandability.

To Friendship's engineers, this meant not only providing for future passenger and cargo traffic, but selecting equipment on the basis of *long service life and safety.* That's why at Friendship, as in so many of the postwar air terminal and other large buildings designed with Tomorrow in mind, Jenkins Valves are installed.

Jenkins builds extra endurance into valves — proved time and again by low upkeep cost records in every type of service. Yet, you pay no more for Jenkins Valves, despite this extra value. Let the Jenkins Diamond be your guide to valve economy . . . for new installations, for all replacements. Jenkins Bros., 100 Park Ave., New York 17; Jenkins Bros., Ltd., Montreal.

SOLD THROUGH LEADING INDUSTRIAL DISTRIBUTORS EVERYWHERE.



BEHIND THE SCENE at Baltimore's $15 million Friendship International Airport, this view shows several of the 683 Jenkins Valves on 24-hour duty, policing steam, air, water and fire lines.

JENKINS VALVES

LOOK FOR THE DIAMOND MARK

SINCE 1864 TRADE JENKINS MARK

Jenkins Bros

Blo-Fan* really moves air!

This, of course, is somewhat exaggerated, but it's an absolute fact that it takes more than plumbing to make a good bathroom. Architects everywhere are specifying Blo-Fan for the bath, because it draws off excessive heat and humidity. It keeps walls from sweating and mirrors from fogging. It prevents embarrassing odors from spreading throughout the house.

Blo-Fan Model 206, designed especially for bathroom installation, is a low-cost, economical unit that pays for itself by keeping the bath looking like new for years and years . . . And, it pays off, too, in cleanliness, comfort and better living.

Two other Blo-Fan models, the No. 208 and No. 210, are also available for installation over the points of air pollution in the kitchen, game room and laundry. Model 210 is equipped with the NINE-SPEED switch, an exclusive Blo-Fan feature, which allows Mrs. Housewife to control the rate of ventilation as easily as she does the speed of her automobile.

Remember, if it hasn't got this blade it isn't a Blo-Fan!!!

This patented Blo-Fan blade combines both fan and blower principles to move more air—quickly, quietly and efficiently!!!

Blo-Fan*

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THE MOST IMITATED HOME VENTILATOR IN AMERICA

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Stocked by more than 600 wholesalers in 350 cities.

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Factories: Pomona, California; Newark, New Jersey Warehouses: Los Angeles, San Francisco, Chicago, Atlanta

THE RECORD REPORTS

(*Continued from page 202*)

new firm name of Hunter and Howard, Associate Architects, with offices at 123 W. Market St., Warren, Ohio.

• William Pereira, head of the firm of W. L. Pereira, Architects and Engineers, has announced the formation of a partnership with Charles Luckman, former president of Lever Brothers Co.

New partners: Luckman and Pereira

The firm will be known as Pereira and Luckman and will continue to specialize in large commercial and institutional architecture and engineering. Headquarters of the firm will remain in Los Angeles. Mr. Luckman graduated with honors in architecture and engineering from the University of Illinois. He has been a registered architect since 1931 and is a member of the American Institute of Architects.

• William E. Wall has joined the staff of Rader Knappen Tippetts Engineering Co., Engineers and Consultants, with offices at 1615 duPont Bldg., Miami 32, Fla. Mr. Wall, who will be mechanical engineer in charge of the Mechanical Department, was formerly with Gilbert Associates, Inc., Reading, Pa., and Maurice H. Connell & Assocs., Miami.

New Addresses

The following new addresses have been announced:

H. B. Gieb & Associates, Engineers, Professional Bldg., 2719 McKinney Ave., Dallas, Tex.

(*Continued on page 206*)

Why M. W. Kellogg's drawings are reproduced on Kodagraph Autopositive Paper

In its London and Paris branches the M. W. Kellogg Company, largest designer and builder of oil refineries, keeps on hand intermediates of its home-office drawings and data sheets.

These are needed for daily reference . . . and to produce blueprints and direct-process prints for its European and Middle East operations.

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Dependable intermediates are a must! And M. W. Kellogg's home office (New York City) gets them promptly, at low cost, simply by ordering intermediates on Kodagraph Autopositive Paper.

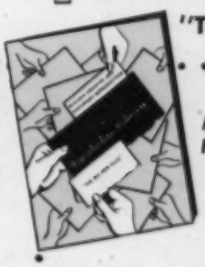
Kodagraph Autopositive intermediates are photo-lasting in the files . . . will not fade, turn yellow, become brittle, or otherwise deteriorate. *Extra protection* which M. W. Kellogg appreciates . . . which forestalls cable "calls" for replacements . . . and costly tie-ups all along the line.

Kodagraph Autopositive intermediates are excellent print-making masters . . . have dense photographic black lines . . . on an evenly translucent, high quality, durable paper base. They do not smudge or lose line density in print production . . . and they turn out sharp, legible final prints time after time—at uniform, practical machine speeds.

Another advantage that saves time and dollars in the field. And another reason why M. W. Kellogg orders Kodagraph Autopositive intermediates of its "foreign work" drawings.

Kodagraph Autopositive Paper

"THE BIG NEW PLUS" in engineering drawing reproduction



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High Efficiency! Doors coil overhead, clear the entire opening.

Extra Space! All floor, wall, and ceiling space is always fully usable.

Convenience! Smooth, easy, upward action saves time and labor.

Do You Specify Doors That Give These KINNEAR Values ?

Safe from Damage. Open out of the way, safe from wind or vehicles!

Extra Protection. All-metal curtain repels fire, theft, and wind.

Extra Durability. Strong resilient curtain withstands more punishment.

Longer-lasting! Many doors in steady service 40 years or more.

Low-Cost Repairs. Slats individually replaced if damaged.

Any Size! Each door built to meet individual requirements.

Kinnear Rolling Doors are easily equipped with Kinnear Motor Operators for highest convenience and efficiency. Pushbutton controls can be provided at any number of convenient points — a feature that not only saves manpower but also reduces heating and air-conditioning costs by encouraging prompt door closure. Every door is specially fitted to the individual opening. Easily installed in new or old buildings. Write for details and estimate on your door requirements.

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Saving Ways in Doorways
KINNEAR ROLLING DOORS

THE RECORD REPORTS

(*Continued from page 204*)

Maple Flooring Manufacturers Association, Pure Oil Bldg., 35 E. Wacker Drive, Chicago, Ill.

ELECTIONS APPOINTMENTS

• Chairmen for the coming year of all the active committees of the New York Chapter of the American Institute of Architects have been announced by President Harry M. Prince.

Heading the committees are: Kenneth K. Stowell, education; Howard Stokes Patterson, fees and contracts; Robert B. O'Connor, finance; Ely J. Kahn, housing; John H. Callender, small house; Jack Bruno Basil, LeBrun Scholarship; Lessing W. Williams, architects emergency; Eldredge Snyder, awards; Milton Glass, bylaws; Richard Boring Snow, yearbook and register; James B. Newman, codes; John A. Thompson, admissions; Ben John Small, activities; Daniel Schwartzman, criticism and esthetics; Francis W. Roudebush, Brunner scholarship; Morris Ketchum Jr., civilian defense; Richard Roth, legislation; John P. Jansson, membership; Maxfield F. Vogel, professional forum; Geoffrey N. Lawford, public relations; Edwin W. Forbes, technical; L. Bancel LaFarge, visiting architects.

• Lester T. Cleveland, president of the American Society of Heating and Ventilating Engineers, has announced the election of eight life members of the Society. They are: L. L. Anthes, Toronto, Ont.; H. P. Gant, Glenmore, Pa.; William McClintock, New York City; L. Walter Moon, St. Louis; Robert M. Rosebrough, Webster Groves, Mo.; J. O. Ross, New York City; Alfred E. Stacey Jr., Syracuse, N. Y.; and Walter G. W. Turno, East Orange, N. J.

• Albert F. Heino of Chicago has been named American architect for the firm of Tyontuote, prefabricated housing company of Helsinki, Finland.

• Roy Comstock, formerly of Cutler-Hammer, Inc., has been named electrical engineer in charge of engineering contact for O.Z. Electrical Manufacturing Company, Brooklyn.

(*Continued on page 208*)

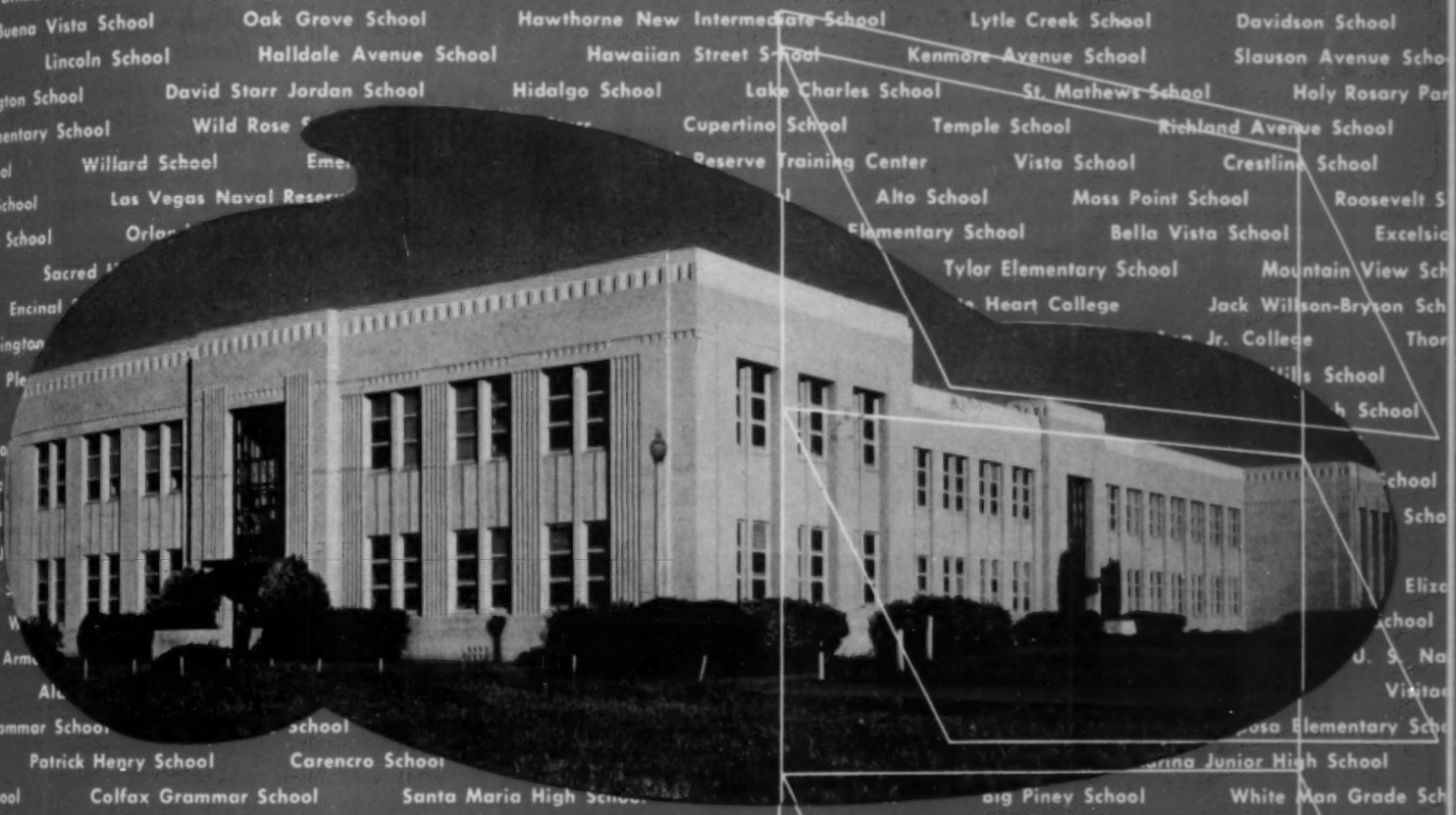
better control of VENTILATION

better control of LIGHT

with Dalmo

AUTOMATIC MULTIPLE WINDOWS

Wood Projected Awning Type



San Mateo Junior College, San Mateo, Calif. • Harry A. Thomsen, Jr. Architect

Dalmo in over 20,000 schools and other buildings

DALMO Continental Inc.

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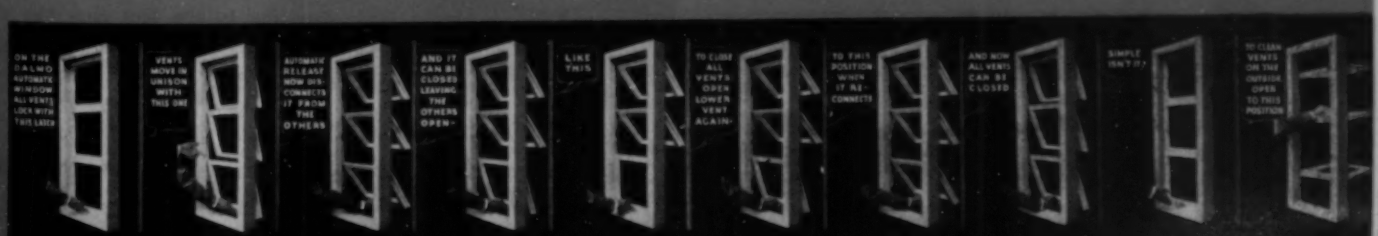
Eastern Sales Office: Thorntown, Indiana

Dalmo The Pioneer Of Awning Type Windows

Details, Catalogs, Specifications Available


ON THE DALMO AUTOMATIC WINDOW ALL VENTS LOCK WITH THIS LATCH
VENTS MOVE IN UNISON WITH THIS ONE
AUTOMATIC RELEASE NOW DISCONNECTS IT FROM THE OTHERS
AND IT CAN BE CLOSED LEAVING THE OTHERS OPEN-
LIKE THIS
TO CLOSE ALL VENTS OPEN LOWER VENT AGAIN-
TO THIS POSITION WHEN IT IS DISCONNECTS
AND NOW ALL VENTS CAN BE CLOSED
SIMPLE ISN'T IT?
TO CLEAN VENTS ON THE OUTSIDE, OPEN TO THIS POSITION

THE RECORD REPORTS

(*Continued from page 206*)

• David W. Locklin, Kenneth L. Lamm and Norman A. Buckley have been named project engineers for the Timken Silent Automatic Division at Jackson, Mich.

• Harry L. Jenter, general superintendent of Cuyahoga Works, American Steel & Wire Co., Cleveland, has been named to succeed Robert E. Cramer as chief engineer of the company. Mr. Cramer, chief engineer since 1945, has been appointed to the newly-created post of chief engineer for the Cyclone Fence Division.

• Administrator Raymond M. Foley of the Housing and Home Finance Agency has appointed J. S. Baughman, general manager of the Home Owners' Loan Corp., as head of the Federal National Mortgage Association, and David J. Duggan as interim director of the prefabricated housing loan program.

all 7

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6800 USERS CAN'T BE WRONG . . . TEST IT YOURSELF AT ONCE!

HUNTINGTON

AT THE COLLEGES

Columbia Inaugurates Evening Planning and Housing Classes

Two important changes have been announced by the Planning and Housing Division at Columbia University in a move directed toward enlarging opportunities for those seriously interested in planning and large scale housing.

Laboratory work in research and design is being offered in evening classes in addition to regular daytime work for full-time students; and prerequisites for students enrolling for the Master of Science degree in Planning and Housing have been broadened to take in all holders of "degrees deemed qualified by the Faculty Committee on Admissions." Previously an undergraduate degree in a physical planning field was required.

The evening laboratory classes were inaugurated to meet increasing demand by the large group of employed young professionals in the New York area. Laboratory programs involving drafting room, office and field work will be somewhat similar to the programs now pursued by full-time day students.

Robert Burlingham will serve as critic for the evening program, assisted by Prof. J. Marshall Miller and Henry S. Churchill. Some studies may be integrated with other evening classes now given by Hugh Pomeroy, Frederick Clark, and Maxwell Tretter.

Students enrolling for the Master of Science degree in Planning and Housing are now admitted on an "unclassified basis," although the average length of time to secure this degree remains about two years of academic work. Specific classification, with a determination of the credits required for the degree, is usually arrived at after the student has completed a semester's work in the Division.

Shortage of Engineers Seen From Enrollment Decline

Dean Thorndike Saville of New York University College of Engineering in his recent annual report viewed with alarm the enrollment decline in freshman engineering classes.

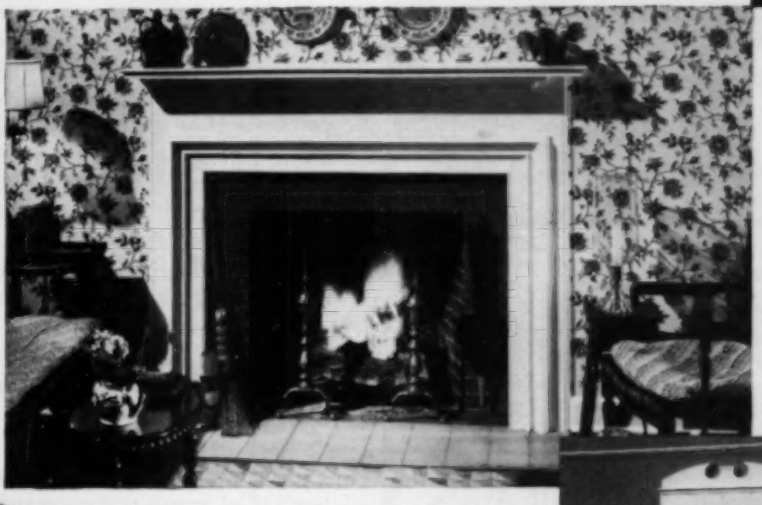
Pointing to the fact that the world of today is steadily increasing the appli-

(*Continued on page 210*)

. . . these beauty spots PAY OFF!

first impressions

are mighty important in creating owner satisfaction. A Curtis entrance like this—design C-1733—adds that extra touch of quality because it is correctly styled—beautiful in its simple lines. Yet Curtis entrances—and there are many for your choice—are priced for even the most modest homes.



the place where they linger

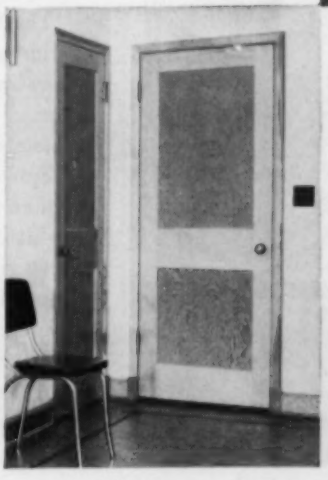
Nothing like a Curtis mantel to give a living room grace and appeal. This Curtis mantel, for example—design C-6059—is suitable for several styles of architecture, yet it does not sacrifice beauty and good detail. Many other Curtis mantel designs are available for your choice.

especially women

respond to the charm and convenience of a well-placed Curtis china case. This one—design C-6558—is made either for flat wall or corner installation. Curtis cases, available in many designs, are quickly and easily installed in any room.

men too

appreciate the additional value of Curtis Prespine doors. Curtis Prespine—the new Curtis wood product—won't warp, shrink or mar. Its surface duplicates the natural grain of ponderosa pine—takes natural finishes beautifully. Curtis doors with Prespine panels are available in several styles for any desired finish.



Curtis makes a complete line of woodwork for homes of all types and sizes. Make your next house "all Curtis."

1866 CURTIS WOODWORK

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AR-10W Curtis Building
Clinton, Iowa

Gentlemen: Please send me literature on Curtis Architectural Woodwork.

Name.....

Address.....

City.....State.....

I am ( ) Architect ( ) Contractor ( ) Prospective Home Builder ( ) Student. (Please check above).

(*Continued from page 208*)

cations of applied science to military and industrial services, Dean Saville emphasized that the huge numbers of students who studied engineering during the first postwar years have been readily absorbed by the economic system. Unless the size of freshman engineering classes can be increased appreciably, a serious shortage of this type of personnel may develop in a few years, he said.

"My report last year dealt with the supply of and the demand for engineering college graduates. The forecasts then made have been substantiated, but a number of occurrences since that time warrant renewed attention to the subject," Dean Saville reported.

"Most important was the widespread publicity in both the daily and professional press accorded a news release on 'Employment Outlook for Engineers' issued in March by the Bureau of Labor Statistics which called attention to the large numbers of engineering students graduating in June 1950 as compared with prewar numbers, and presented a pessimistic outlook as to the immediate availability of sufficient engineering jobs to absorb them.

"Worst of all was a colored pictorial chart accompanying the release which showed the rapid increase in engineering graduates since 1945 and which had a caption 'So Many Will Be Graduated in the Next Few Years that Many Graduates Will Be Unable to Get Jobs.' This came into the hands of hundreds of high school advisors and the implications were reported in nationally distributed popular magazines. It is the opinion of a great many engineering college administrators that the impressions thus conveyed are in no small measure responsible for the sharp decline in freshman enrollment in engineering colleges for September 1950, which may well be below prewar figures."

Dean Saville pointed out that the Bureau of Labor Statistics presented a generally "bullish" appraisal of future opportunities in engineering in its full release and report, but these were generally overlooked in favor of the more spectactular short-term forecast. The Bureau stated: 'Engineering is the nation's third largest profession and one of the fastest growing . . . great numbers of engineering jobs will be available over the next decade.'"

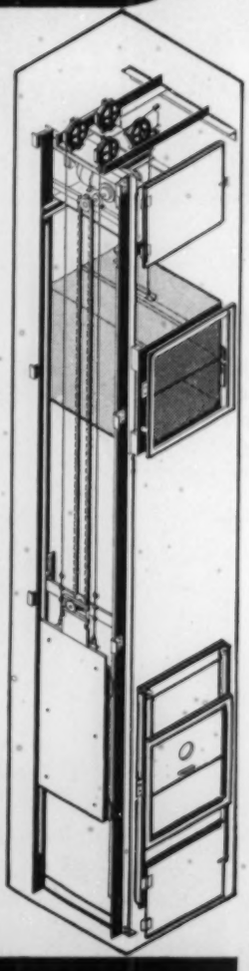
More recent detailed studies, by the Manpower Survey Committee of Engineers Joint Council and by the Manpower Committee of the American Society for Engineering Education, Dean Saville's report pointed out, have produced data indicating that even without the developing war situation engineering graduates will be in short supply by June 1952 if not before.

"The future looks rosy for the engineering graduate, but may be dark for the national efforts dependent upon engineers," the report went on. "The number of freshmen declined to 42,000 in September 1949, and is estimated at no more than 36,000 in September 1950. The latter number would produce about 20,000 graduates in June 1954. If 35,000 engineering graduates obtained real engineering jobs in 1949, and probably more from the large 1950 class, it seems clear that a serious shortage of young engineers is pending."

(*Continued on page 212*)

THE *Sedgwick* ROTO-WAITER

...a new kind of fully automatic electric dumb waiter that *never* overtravels



FOR TWO-STOP INSTALLATIONS . . . the new Sedgwick Roto-Waiter, with its unique endless chain drive principle of operation, embodies those features of safety, dependability and economy that make it the ideal dumb waiter for schools, hospitals, hotels, restaurants, stores, banks, libraries, factories, clubs, residences and other commercial, institutional and industrial buildings.

Sedgwick Roto-Waiters . . .

1. Never overtravel
2. Are completely factory assembled and tested
3. Operate automatically, safely with push-button control and doors interlocked.
4. Require only minimum clearances
5. Have an overload safety device for safe operation
6. Cut costs with simplified motor and control equipment
7. Require no heavy load-bearing supports, except at bottom
8. Are easy to install

Dimension table lists three standard *counterweighted* Roto-Waiters. A Sedgwick *uncounterweighted* Roto-Waiter (with car size 24"x24" x36", 150 lbs. capacity) is also available when the dumb waiter is to be installed for undercounter use.

STANDARD ROTO-WAITER DIMENSIONS			
Size No.	2C	3C	5C
Capacity, lbs.	200	300	500
Car width, in.	24"	30"	36"
Car depth, in.	24"	30"	36"
Hoistway width, in.	33"	39"	45"
Hoistway depth, clear in.	27"	33"	39"
Hoistway depth, including doors, in.	29"	35"	41"

Remember, too—the Completeness of the Sedgwick Line That Enables You to Meet Every Client's Requirement . . .

In addition to the Sedgwick Roto-Waiter, Sedgwick also builds Multi-Stop Electric Traction Dumb Waiters for three or more landings—with a wide selection of specially engineered control equipment and signal systems to suit individual service needs. Other Sedgwick Dumb Waiters—including both electrically and manually operated types—are likewise available in a wide range of sizes and capacities. Specify, too, Sedgwick Steel Dumb Waiter Doors for complete satisfaction.

Feel free to consult our engineers, who will be glad to work with you on any vertical transportation problem.

Sedgwick MACHINE WORKS
142 West 15th Street, New York 11, N. Y.
ELEVATORS · DUMB WAITERS · RESIDENCE ELEVATORS · STAIR-TRAVELORS
ROTO-WAITERS · SIDEWALK ELEVATORS · FREIGHT ELEVATORS · DUMB WAITER DOORS
THE MAXIMUM IN SAFETY . . . THE ULTIMATE IN ECONOMY — SINCE 1893

WHEN YOU BUILD . . .

UNDIVIDED RESPONSIBILITY IS YOUR KEY TO LOWER CONSTRUCTION COSTS

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THE RECORD REPORTS

(*Continued from page 210*)

Schaeffer School of Design Announces Expanded Program

Rudolph Schaeffer has announced an expansion of courses in design and color at the Rudolph Schaeffer School of Design in San Francisco, in collaboration with Sibyl Moholy-Nagy and Martin Metal, guest instructors.

"Integrated visual, aesthetic and intellectual training in all professional fields of design and color," according to the announcement, will be offered in a four-year course leading to a bachelor's degree.

The professional one-year course in interior design is still being offered.

Architects Among 20 Artists Here in International Group

Two architects are among the 20 artists who were chosen to participate in the 1950 International Arts Program sponsored by the Institute of International Education and the Rockefeller Foundation. Candidates were nominated by the Ministers of Education and Cultural Attaches in foreign countries, and final selections were made by committees in the United States composed of authorities in each of the fields represented — architecture, art, dance, film, literature, music and theater.

Carlos Contreras Pages of Mexico and Hernan Viecos of Colombia were the architects selected.

Following arrival of the artists on September 15, a three-month program was scheduled to include study, travel, attendance at performances and exhibits, demonstration of their own work, and consultation with outstanding American figures in the art world. They will visit art schools and universities in various parts of the country and will return to New York in December for a final seminar.

Faculty Appointments

• Dr. Erwin H. Amick Jr., associate professor of chemical engineering at Columbia University, has been appointed to the new post of associate dean of the School of Engineering. Dr. Amick, who has been with the department for four years, will share administrative responsibilities with the Engineering School's new dean, John R. Dunning, enabling Dean Dunning to devote much of his time to the school's development program for a new Engineering Center.

• H. H. Waechter, formerly associate professor of architecture at Virginia Polytechnic Institute, has been appointed associate professor of architecture at the School of Architecture and Allied Arts at the University of Oregon, Eugene, Ore.

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Waylite offers many important economies and advantages in structural design. Also widely used as floor and roof fills. See data in Sweet's—for additional information and quotations write The Waylite Co., 105 W. Madison St., Chicago 2, or Box 30, Bethlehem, Pa.

WAYLITE AGGREGATE

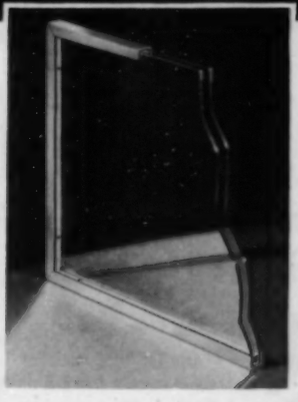
AWARDS

Parents' Magazine Lists Merit Award Winners

Albert Balch, Seattle builder, has won triple honors in the nationwide competition sponsored by *Parents' Magazine* to "spotlight the pacemaking work of the nation's leading builders by finding and selecting the best homes for family living which were built and sold in the United States during 1949."

(*Continued on page 216*)

THE TREND in many ranch-type houses is toward a fixed window wall, with louver type ventilator. That's a feature which your clients will appreciate. For this construction, offered by Solar Air-Flo, Inc., Elkhart, Indiana, permits an unobstructed view through the Pittsburgh Twindow panels, with adequate ventilation and insulation. The louvered sections may be placed at top, bottom or sides of the Twindow panels, according to your design requirements.



HERE'S the construction of a Twindow unit, using two panes of Pittsburgh Polished Plate Glass. The hermetically-sealed air space between the panes provides effective insulation which minimizes downdrafts, cuts heat loss through windows, reduces condensation. Insulation is even more efficient when three or more panes are used. Forty-seven standard Twindow sizes are available, adaptable either for wood or steel sash.

IN QUALITY, permanence, beauty, Carrara Structural Glass is unsurpassed. You'll find it ideal for walls and wainscots of bathrooms and kitchens, as well as for window sills, fireplace surrounds, splash panels, built-in shelves. Carrara Glass is impervious to water, acids, chemicals, weather, pencil marks. It does not absorb odors, is easily cleaned with just a damp cloth. It is available in ten attractive colors. And it is readily decorated in various ways. Architect: Henry W. Johanson, Roslyn, N. Y.

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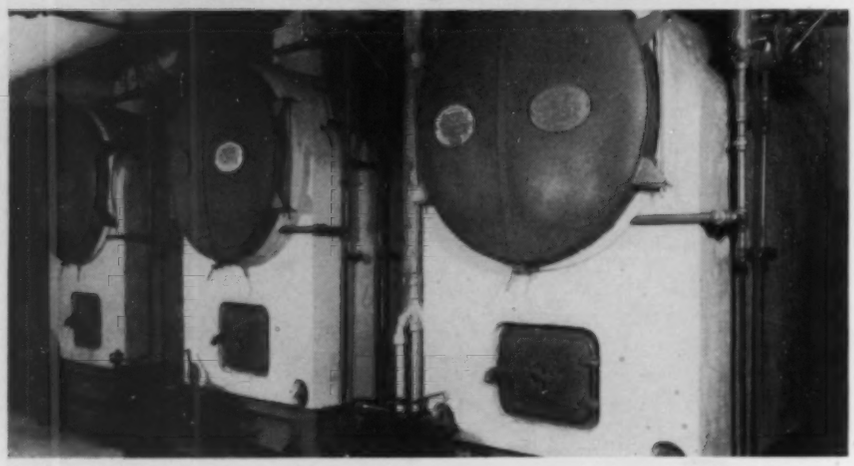
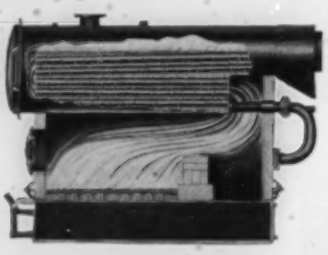


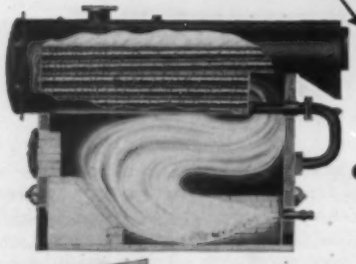
Titusville Boiler Installation of three natural gas fired steel heating boilers in an important southern high school.

Cutaway view to show Type CC Compact Boiler (hand fired)

1. Large Grate Area
2. Large Furnace Volume
3. Large Disengaging Area
4. Large Steam Volume
5. Long Heat Travel



These Features Assure More Savings in Fuel and Maximum Heat Output



1. Long Flame Travel
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4. Highest Efficiency
5. Longest Life

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THE RECORD REPORTS

(*Continued from page 212*)

Mr. Balch won the Merit Award for his geographical area in each of the two cost classes — under $16,000 and $16,000 to $25,000 — set up for the competition; and his entry in the latter class also won the National Merit Award.

Chiarelli & Kirk of Seattle were the architects for the National Merit Award entry, which had sold for $19,500. It had already been designated as a Revere Quality House.

In the lower-priced class, a house designed for Mr. Balch by W. A. Wollander of Carroll Hedlund & Associates of Seattle received the Merit Award for the area. That entry had sold for $13,132.

Entries were divided into five regional groups and further divided into the two cost classes. Considerations which influenced the judges included the usefulness of the site as planned for outdoor family activities, the intelligent use of manufactured materials and products for durability, simplicity of maintenance and attractive architectural design, and the structural soundness and quality of workmanship.

The panel of judges included Clarke Daniel, head of the Design and Construction Committee of the National Association of Home Builders, who served in the absence of President Thomas Coogan; Richard Bennett, A.I.A., of Loebl, Schlossman & Bennett, and former professor of architecture at Yale; William H. Scheick, A.I.A., executive director, Building Research Advisory Board, National Research Council, and director (on leave) of the Small Homes Council of the University of Illinois; Mrs. Maxine Livingston, Family Home editor, *Parents' Magazine*.

No awards were made in two of the geographical areas in the under $16,000 class, since the judges felt the entries submitted did not justify Merit Awards.

The complete list of Merit Award winners, with selling prices of the winning entries and their architects, follows:

Under $16,000 — (1) Carl M. Freeman, Inc., Washington, D. C., builder; $14,950; Robison Heap, Alexandria, Va., architect. (2) No award. (3) No award. (4) Albert Balch, Seattle, Wash., builder; $13,132; W. A. Wollander of Carroll Hedlund & Associates, Seattle, architect. (5) Jere Strizek, Inc., Sacramento, Calif., builder; $7300; Herbert E. Goodpastor, Sacramento, architect.

(*Continued on page 218*)

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THE RECORD REPORTS

(*Continued from page 216*)

$16,000 to $25,000 — (1) Stackler & Frank, Hempstead, N. Y., builder; $24,900; Alwin Cassens Jr., Forest Hills, N. Y., architect. (2) Gerholtz Community Homes, Inc., Flint, Mich., builder; $25,000; C. W. Babcock Organization, Detroit, Mich., designer. (3) Mrs. R. B. Butler & Son (Butler's Personality Homes, Inc.), Tulsa, Okla., builder; $24,750; Mrs. R. B. Butler & Son, designer, assisted by Leo M. Clark, Tulsa, Okla.; (4) Albert Balch, Seattle, Wash., builder; $19,500; Chiarelli & Kirk, Seattle, Architects. (5) Milton A. Ryan, San Antonio, Tex., architect and builder; $19,990.

The Freeman and the Strizek houses also had been designated as Revere Quality Houses.

The Merit Awards will be formally presented to the winners during the annual convention of the National Association of Home Builders in Chicago next January. Details of the 1950 competition will be announced at that time.

LINCOLN FOUNDATION GIVES ENGINEERS ANNUAL AWARDS

A total of $5000 has been awarded in 77 cash prizes and $1750 given in scholarship funds to schools in the Lincoln Foundation's 1949–50 Engineering Undergraduate Award and Scholarship Program.

Gordon Dickson Orr Jr. of Meriden, Conn., received the first award for his paper on "A Comparison of Framing in Welded Steel and Aluminum." Mr. Orr received $1000 in cash and $1000 in scholarships has been granted in his honor to Rensselaer Polytechnic Institute of Troy, N. Y. Four scholarships will be established in Mr. Orr's name in the Department of Architecture, where he was enrolled when he prepared his award paper.

The State University of Iowa, Iowa City, Ia., was given $500 in scholarship funds in honor of the second award winners, Francis Springer and Earle Compton, both of Iowa City, and enrolled in the Department of Mechanical Engineering. Mr. Springer and Mr. Compton divided the second cash award of $500 for their paper "Investigation of some practical Applications of the Low Hydrogen Type Electrodes."

Jerry J. Watson of Seattle, Wash., received third award of $250 and in his honor Oregon State College was granted

(*Continued on page 220*)

"Light Magic" in PLANNED LIGHTING! FOR WORKING WONDERS

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The flexibility of Pittsburgh Permaflector Lighting Equipment is a modern miracle of design and construction.

For example—Pittsburgh Permaflector Slimline Luminaires are available in 48″ and 96″ lengths. They may be surface or pendant mounted, individually or end-to-end. When used with companion incandescent down-lights, they can be installed to form squares, rectangles, "T's", cross-overs, checkerboards and other patterns.

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THE "HARRISON" SLIMLINE LUMINAIRE, in 2, 3 or 4 lamp models. Gracefully curved side-panels, flat bottom-panels of Alba-Lite glass distinguish this modern slimline luminaire. Companion incandescent units are designed especially for use with the "Harrison" and other Presidential Fluorescent Luminaires.

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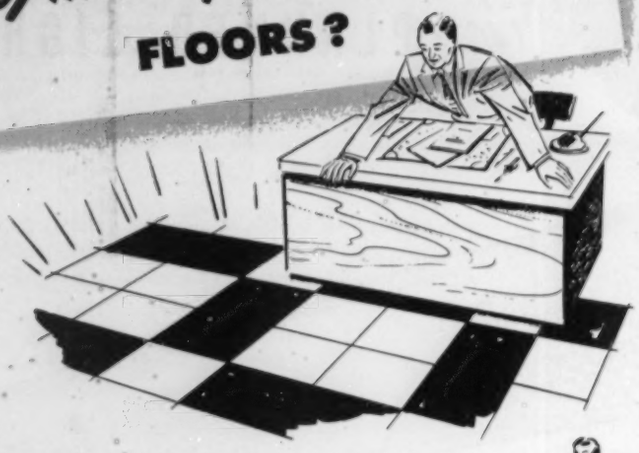

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THE RECORD REPORTS

(*Continued from page 218*)

funds of $250 for a scholarship in the Department of Engineering and Industrial Arts. Mr. Watson's paper was entitled "A Study of Arc Weld Fabrication of Turret Tools for Turret Lathes."

The award program, open to all undergraduate engineers registered in engineering colleges, offers each year awards for papers on arc welded design, fabrication, maintenance or research. The program is sponsored by The James F. Lincoln Arc Welding Foundation of Cleveland, to give undergraduate engineers an opportunity to do creative engineering on a level with that which they will be doing when employed by industry.

Dr. E. E. Dreese, chairman of the Department of Electrical Engineering at Ohio State University, headed the jury which selected this year's award winners. Serving on the jury were: Gilbert S. Schaller, professor of mechanical engineering, University of Washington, Seattle, Wash.; Emmett B. Moore, chairman, Department of Civil Engineering, State College of Washington, Pullman, Wash.; J. B. Wells, professor of structural engineering, Stanford University, Stanford, Calif.; S. H. Graf, professor of mechanical engineering, Oregon State College, Corvallis, Ore.

Dates for the current competition have been announced by the Foundation as June 1, 1950 to May 31, 1951. All engineering undergraduates are eligible to participate, regardless of their graduation date during the year, so long as the entry is submitted while they are still registered as undergraduates.

EXHIBITIONS

Circulating Exhibitions Are Available Through Museum

Circulating shows which can be obtained through the Museum of Modern Art include some in the field of architecture and design.

The Museum's new catalog of circulating exhibitions, which can be obtained upon request, lists shows dealing with "Architecture and the City Plan," the textiles of Anni Albers and "The Modern Chair" among others. Selections from the furniture exhibition resulting from the Museum of Modern Art Inter-

(*Continued on page 222*)

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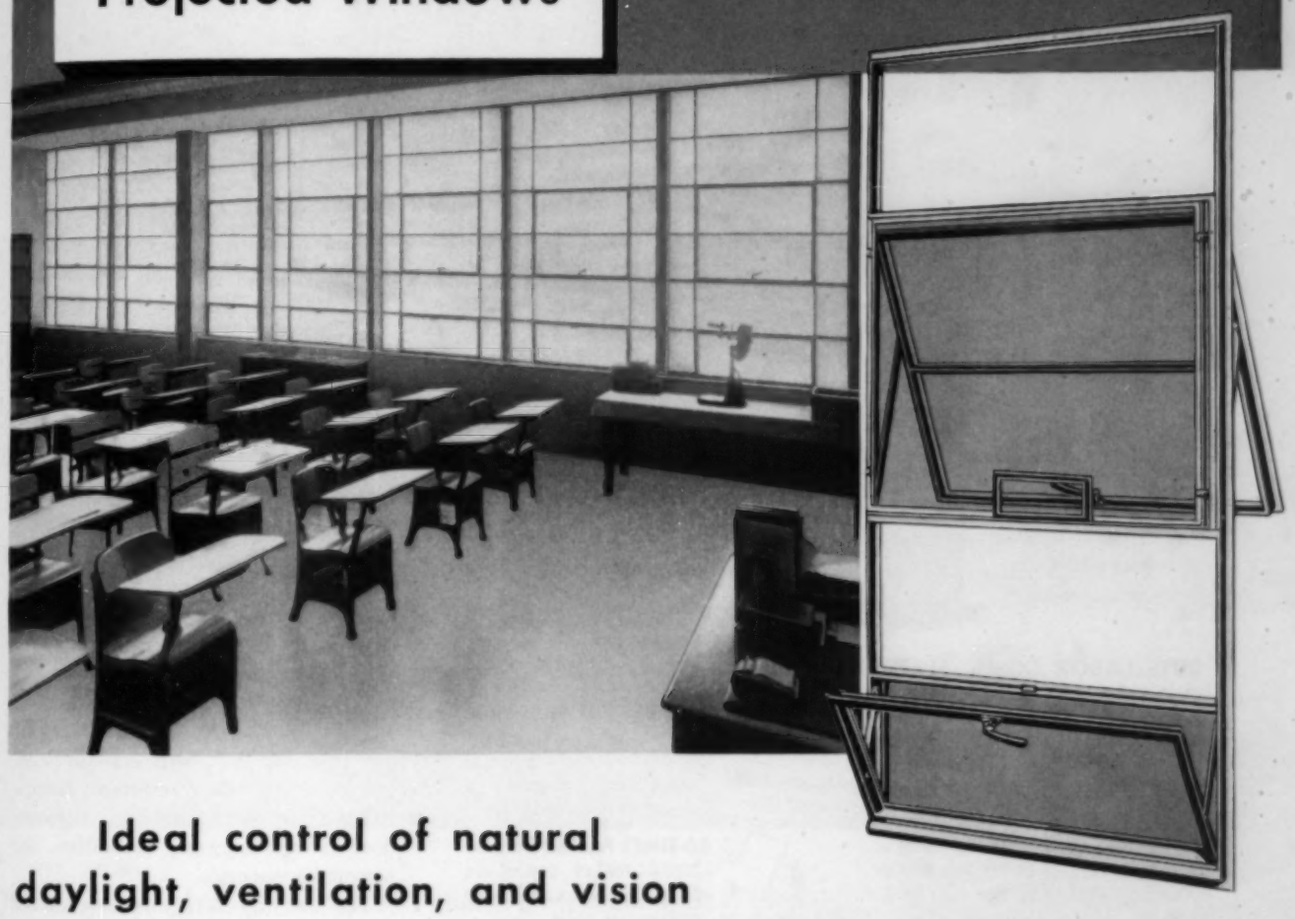
of every size and type



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School administrators back up the architectural wisdom of selecting windows that provide ample classroom lighting, draft-free comfort, and clear visibility, and are styled to blend with any type of building design. On every count, Bayley Aluminum Projected Windows are the logical choice, as proved by constantly expanding, nationwide use.

These windows are made of specially extruded, extra-strength aluminum sections that never need painting. Structurally simple, they have no complicated mechanical parts to get out of order. Economical in both first cost and maintenance. The Projected-Out Ventilator, with awning effect, affords weather protection. This and the Projected-In Ventilator are adjustable to permit "no-draft" air circulation.

Screens supplied as optional equipment. Venetian or other blinds can be readily applied. (Bayley Projected Windows are also available in steel construction.) Write for complete details today.

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- **SIMPLICITY**—no gears, cranks, or other complex mechanism
- **UNIVERSAL**—readily adapted to any structural treatment
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- **ACCESSIBLE**—smooth surfaces easy to wash from inside
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THE RECORD REPORTS

(*Continued from page 220*)

national Low-Cost Furniture Competition shown at the Museum this summer will also circulate.

Museum Plans European Tour For U. S. Furniture Exhibit

The first large exhibition of well-designed American home furnishings to tour the principal cities of Europe and Great Britain is being organized by the Museum of Modern Art.

As director of the overall activity, the Museum has appointed Edgar Kaufman Jr., who is also conducting the "Good Design" exhibitions for the Museum in collaboration with The Merchandise Mart, Chicago. Because of the demands of these joint duties, Mr. Kaufman will not continue his connection with the Department of Architecture and Design.

The exhibition will be planned to present to Europeans the progressive side of American design against a striking background, suitable for shipment, which is now being prepared by Alexander Girard, architect, of Detroit. Mr. Girard recently staged a large and successful exhibition, "For Modern Living," at the Detroit Institute of Arts. He will also prepare an illustrated catalog of the exhibition.

The exhibition, to be called "Design for Use, U.S.A.," will contain some 500 items, including furniture, fabrics, lamps, pottery, glassware, flatware, floor covers, luggage, decorative and personal accessories.

The first stop on the tour is scheduled for early next year at the Landesgewerbemuseum in Stuttgart, which originally requested it.

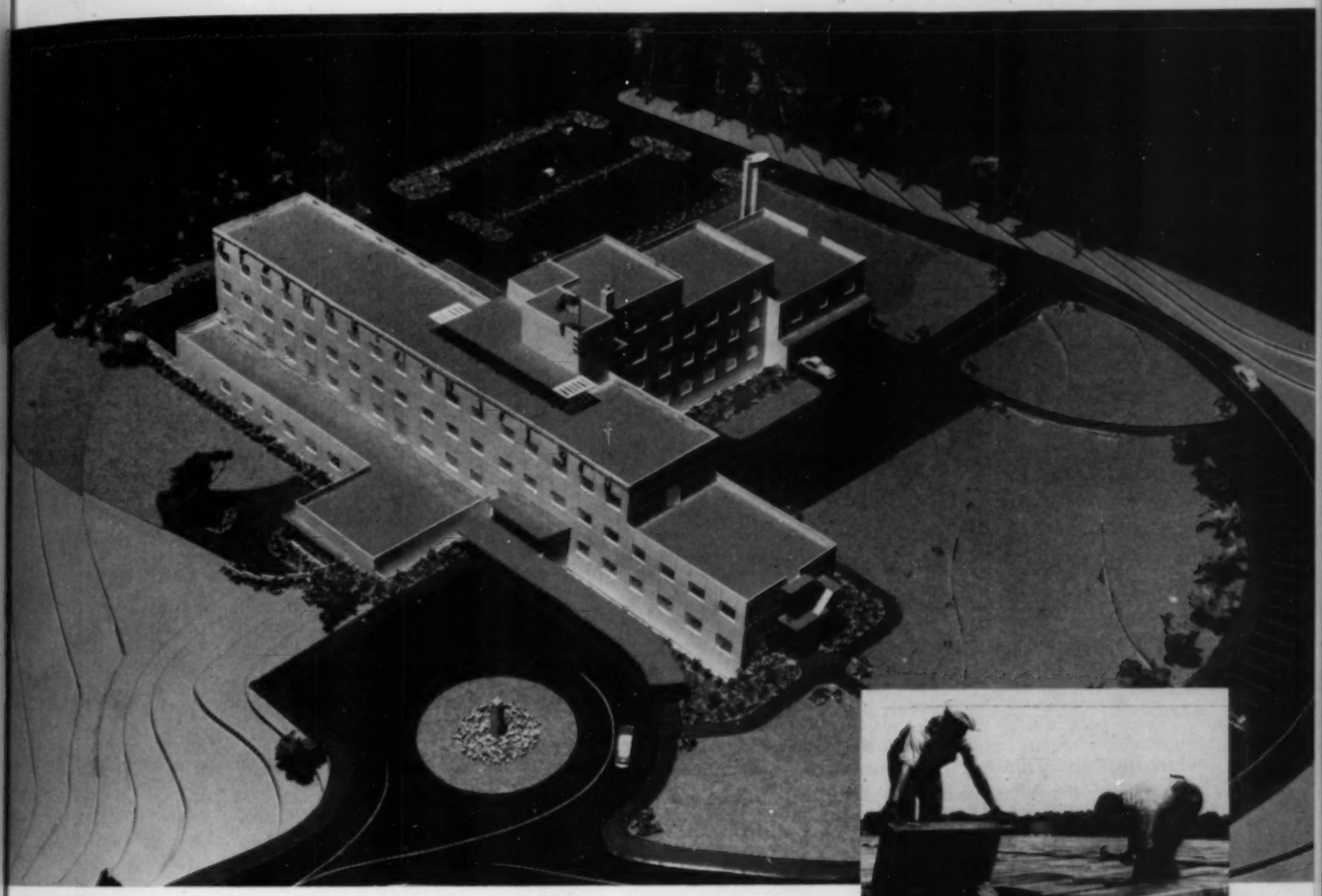
"This exhibition," says the Museum's announcement, "is organized in the belief that it will be a timely and effective presentation of progressive cultural achievement in the U. S. shown in terms that need no translating and that have the widest human appeal."

NEW PRESIDENT TALKS AT 1950 CONFERENCE OF I.E.S.

Walter Sturrock of the General Electric Company, incoming president of the Illuminating Engineering Society, addressed the opening session of the 1950 Conference of the Society at the Hotel Huntington, Pasadena, Calif.

(*Continued on page 224*)

Strong Enough to resist an *Earthquake*



Labor of placing and removing steelforms by skilled Ceco workmen is ordinarily included with the rental charge.

There's one word usually associated with hospitals—"QUIET." But there's another word that's equally important—"SAFETY"—and it covers every phase of hospital activity. So, when the Sequoia Hospital of Redwood, California was designed, extra consideration was given the matter of construction methods. Here's where Ceco Concrete Joist Construction met the need. It provides strong, rigid floor construction. Yes, construction strong enough to resist an earthquake—shockproof yet flexible enough to absorb great strain—safe again since it's fire resistive. And Ceco Concrete Joist Construction answers the need of "QUIET" in hospitals because it assures a soundproof building. All this is possible at definite savings—less labor, less concrete, less lumber. And since removable steelforms are used over and over again, from floor to floor, only a nominal rental is charged. As originator of the steelform method, Ceco is first in the field. So for concrete joist construction, call on Ceco, the leader over all.

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New "Safety-Sealed" Gas-Heating Unit needs NO chimney, NO ducts NO electricity!

Brings *zone-controlled* heat to a single room, suite of rooms or an entire building!

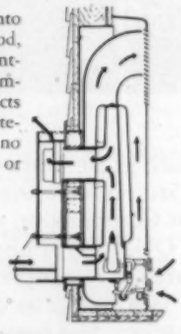
As a main or auxiliary source of heat, this new Stewart-Warner "Safety-Sealed" unit brings positive safety and *zone-controlled* comfort to homes, cottages, cabins and motels. Each Saf-Aire unit is a completely automatic, independent gas heating system that wastes no basement, closet or floor space!

Exclusive "Safety-Sealed" construction positively seals all combustion products from contact with the heated room air. Only *outside* air is used for combustion, drawn in through the exterior wall vent, then vented outside immediately.

Saf-Aire also provides the perfect answer for hard-to-heat rooms, attics, glassed-in porches and remote wing areas. Available with manual or thermostat control, this versatile unit operates with absolute silence on natural, manufactured or LP gas.

WRITE NOW for complete model specifications and performance data on Saf-Aire and other models in the complete Stewart-Warner line of "Safety-Sealed" gas heating equipment.

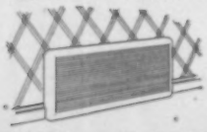
SAF-AIRE fits easily into any exterior wall of wood, brick, stucco or cement-block construction. Combustion chamber connects directly to the small exterior wall vent. Needs no costly chimney, ducts or electricity to operate!



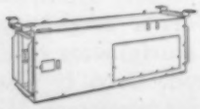
Model 991-14
14,000 BTU/HR
18" x 24" x 4"

Model 992-20
20,000 BTU/HR
18" x 38½" x 4"

These Stewart-Warner Heaters are "Safety-Sealed," too!



South Wind Zone Heating System
Installed in any inside or outside wall. Single or double grille units. Two forced-air units heat the average home. Automatically modulated flow of heat. Thermostat control.



South Wind Zone Furnace
Compact, forced-air unit. Easily tucked away under the floor, in a closet or any convenient space. Short ducts from centralized installation. Thermostatic heat control.

STEWART (Safety Sealed) WARNER
DOMESTIC HEATING

Approved by American Gas Association

STEWART-WARNER CORPORATION
South Wind Division • 1524 Drover Street • Indianapolis 7, Indiana

THE RECORD REPORTS

(*Continued from page 222*)

Speaking before more than 600 members and guests, Mr. Sturrock outlined the Society's plans for 1950–51.

"There has never been a time in the history of the Society when it has been involved in a greater number of separate but related activities," he said. "These activities range all the way from highly scientific fundamental researches to the solving of lighting application problems."

Referring to the Society's growth, Mr. Sturrock noted that the membership has doubled (3341 to 7057) in the past eight years. The goal is 10,000 members, he said, "with a long-range program to maintain interest over the years."

Mr. Sturrock referred to the monthly publication of the Society, *Illuminating Engineering*, published since January 1949 in a new format. "Its pages," he said, "must necessarily be devoted to timely reports, technical papers, and lighting news items of interest to a fair proportion of its readers and advertisers."

More attention is being given to formal education in illuminating engineering by colleges and universities, Mr. Sturrock remarked, pointing out that a recent review of the curricula of 72 colleges showed 47 that offer illuminating engineering courses for two hours or more of credit.

"It is of interest to find," he observed, "that 21 of the 47 colleges require all the electrical engineering undergraduates to take the illumination course; the work in the other colleges is elective. A total of 1950 students were enrolled in these courses in April of this year. The increased enrollment from year to year has inspired the formation of I.E.S. student branches which the Society has chartered and which it will continue to support. Many colleges and universities are actively engaged in fundamental researches in light, vision and seeing. A recent survey indicated that 34 projects are being carried on through them, of which 12 are under the sponsorship of the I.E.S. Research Fund."

Other recently elected officers of the Society are: E. M. Strong, Cornell University — vice president; R. F. Hartenstein, Ohio Edison Co. — treasurer; A. H. Manwaring, Philadelphia Electrical & Mfg. Co. — general secretary;

(*Continued on page 226*)

YOU CAN BE **SURE**.. IF IT'S

Westinghouse

"Low Impedance BUS DUCT for the Long Run"

"We've found Westinghouse low impedance bus duct to be ideal for long transmission runs in a plant," say Mr. R.W. Holicky, Chief Engineer, and Mr. W. F. Nock, Field Supervisor, of the Doan Electric Company in Cleveland. "It's easy to handle and no trouble at all to hook up."

Let bus duct answer *your* secondary power distribution problems—whether you're building or expanding. Low impedance bus duct provides required voltage right out to the end of your system . . . keeps lights, motors, and other equipment functioning at top efficiency. In addition, it packs greater carrying capacity into a smaller space than either conduit or wire. And bus duct means reduced maintenance.

Completely pre-fabricated sections can be installed up out of the way of plant traffic—quickly and easily. What's more, the sections can be disassembled immediately and rushed to new locations with no wiring mess to unravel.

Ask your Westinghouse representative for the facts on dollar and space-saving bus duct. Descriptive bulletin B-4271 contains further information. Westinghouse Electric Corporation. P. O. Box 868, Pittsburgh 30, Pennsylvania. J-30042

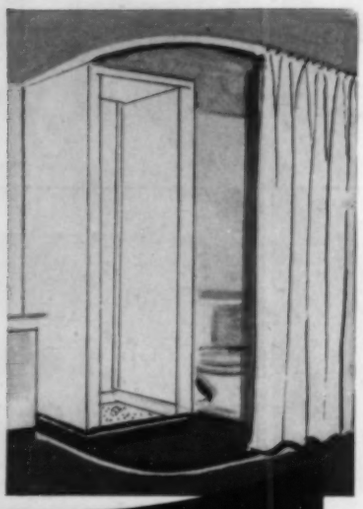
Westinghouse

BUS DUCT

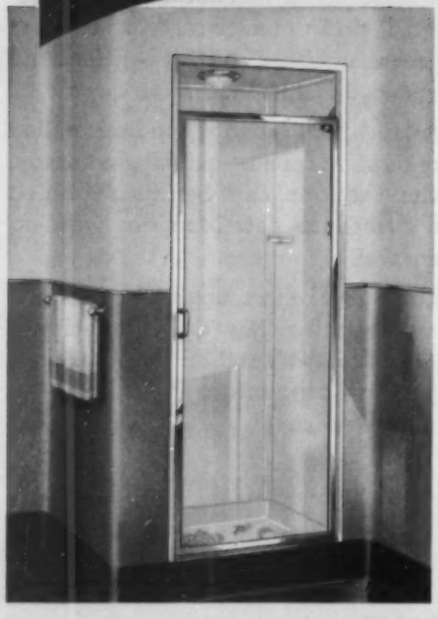
IN THE RECREATION ROOM

To complete the comfort facilities in the recreation area and to relieve the "traffic" pressure on master bathrooms, self-contained leakproof Weisway Cabinet Showers are available in models especially designed and priced to make extra bath facilities possible even with limited building budgets.

Weisways are economical of space, too,—a three-foot square, or even less, is enough. They are readily installed in old or new homes without special treatment of building walls or floor. Don't confuse Weisways with ordinary "shower stalls." Weisways are quality fixtures, proved by years of service in finest homes.



More Bath Facilities with *Weisway* CABINET SHOWERS In Homes of Every Price



Vitreous Porcelain FLOOR AND WALLS

The famous Weisway VP models combine the advantages of guaranteed leakproof construction, unaffected by settling or shrinkage of surrounding materials, with vitreous porcelain enamel walls *and the exclusive Foot-Grip, No-Slip floor of vitreous porcelain on heavy enameling iron.* No metal underpan is required, no messy mastic needed for installation. Weisway in-a-wall models are available for built-in shower installations.

Weisways are offered in a range of models and in five beautiful colors, in addition to white, to meet a wide variety of planning ideas and requirements.

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Please send your new catalog of the complete line of Weisway Cabinet Showers.

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Contains detailed information and specifications on the complete Weisway line, including samples of the five sparkling colors in which Weisways are now available. This new catalog should be in your files—mail coupon or write for it now!

THE RECORD REPORTS

(*Continued from page 224*)

L. A. Hobbs, Smoot-Holman Co. and Roy A. Palmer, Duke Power Co.—directors.

LENOX R. LOHR HEADS ENGINEERING CENTENNIAL

Maj. Lenox R. Lohr, president of the Chicago Museum of Science and Industry, has been named president of 1952, Inc., a non-profit corporation set up to direct the Centennial of Engineering planned for Chicago in 1952 by the American Society of Civil Engineers.

"The project," according to the ASCE announcement, "will provide opportunity for American industry to emphasize its contributions to the advancement of civilization and to pay tribute to the free enterprise system that has made this progress possible."

The Centennial also will mark the 100th anniversary of the founding of the American Society of Civil Engineers, the oldest national engineering society in the country.

In addition to civil engineering, the celebration will include the entire engineering field, with the other societies joining forces to produce an event of international significance.

The celebration, including an exposition and a convocation of engineers, is planned for July 1 to September 30, 1952 and will be centered in the Museum of Science and Industry in Jackson Park, Chicago.

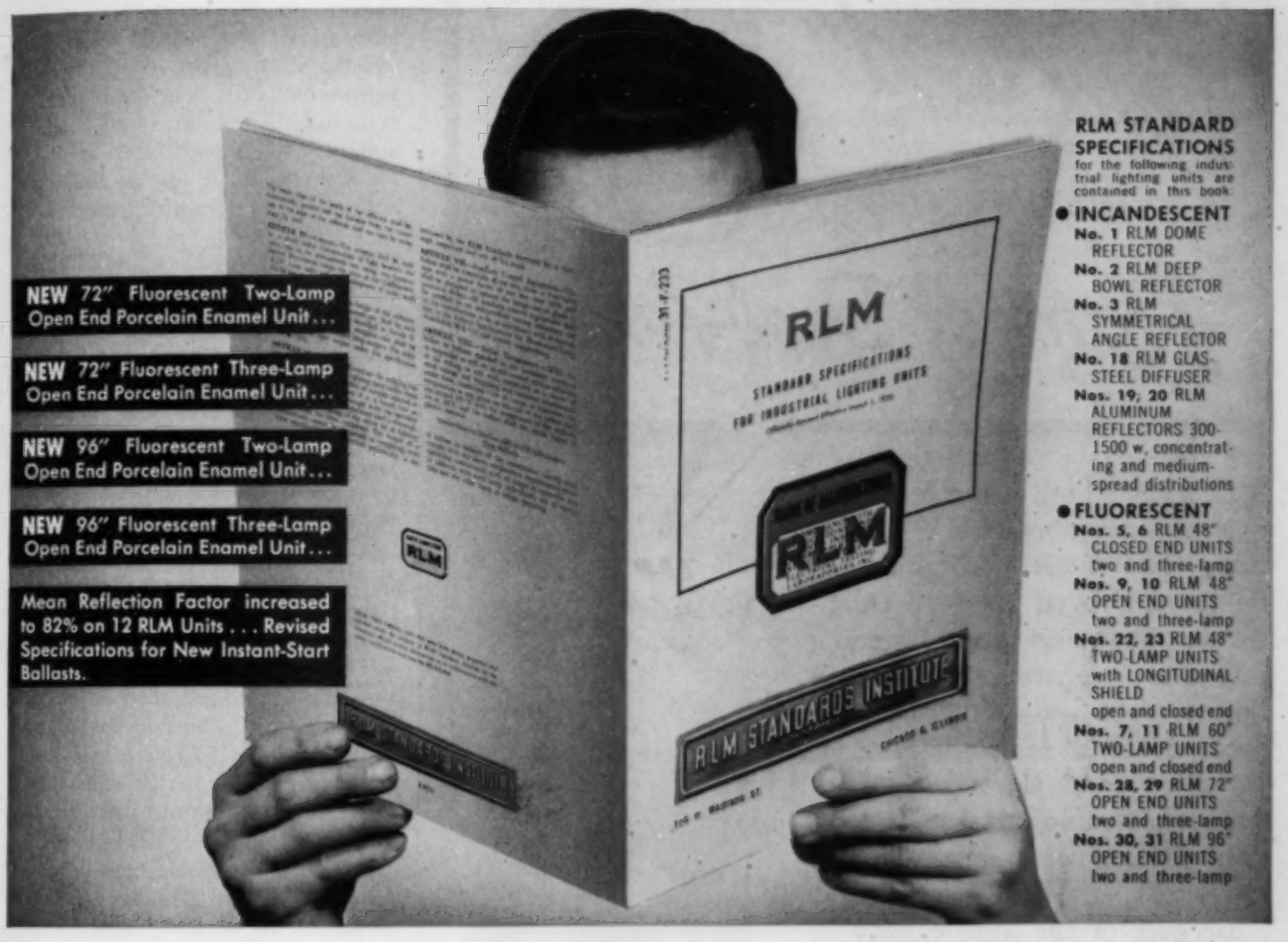
Preliminary plans envisage a variety of activities for both the general public and the professional engineer.

Opening in early June will be a new permanent educational exhibit installation designed to bring home to visitors the tremendous contributions made by engineering during the past 100 years to the development of the nation and the elevation of the American standard of living. There will be appropriate temporary exhibits by engineering and industrial firms.

The greatest convocation of the engineering profession ever held is scheduled to take place Sept. 3–13. Each of the other Engineers Joint Council societies has accepted an invitation to unite with ASCE in the Centennial Celebration, each planning to hold a full-scale meeting during the convocation period. The American Institute of Architects

(*Continued on page 228*)

4 NEW RLM SPECIFICATIONS AND IMPORTANT REVISIONS


NEW 72" Fluorescent Two-Lamp Open End Porcelain Enamel Unit...
NEW 72" Fluorescent Three-Lamp Open End Porcelain Enamel Unit...
NEW 96" Fluorescent Two-Lamp Open End Porcelain Enamel Unit...
NEW 96" Fluorescent Three-Lamp Open End Porcelain Enamel Unit...
Mean Reflection Factor increased to 82% on 12 RLM Units . . . Revised Specifications for New Instant-Start Ballasts.
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for the following industrial lighting units are contained in this book:
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Nos. 19, 20 RLM ALUMINUM REFLECTORS 300-1500 w, concentrating and medium-spread distributions
● FLUORESCENT
Nos. 5, 6 RLM 48" CLOSED END UNITS two and three-lamp
Nos. 9, 10 RLM 48" OPEN END UNITS two and three-lamp
Nos. 22, 23 RLM 48" TWO-LAMP UNITS with LONGITUDINAL SHIELD open and closed end
Nos. 7, 11 RLM 60" TWO-LAMP UNITS open and closed end
Nos. 28, 29 RLM 72" OPEN END UNITS two and three-lamp
Nos. 30, 31 RLM 96" OPEN END UNITS two and three-lamp

This New, Free Book of RLM Specifications Gives You the Up-To-Date Information Needed for BETTER PLANNED LIGHTING

For Better Planned Lighting, everyone who specifies, recommends, buys or sells industrial lighting equipment needs a copy of this new book, officially revised on March 1, 1950 and just off the press. It contains nineteen officially approved RLM Specifications. This book is a valuable aid in measuring illumination, construction and performance standards which are basic to lighting equipment efficiency, economy and ease of maintenance.

New RLM Slimline Lamp Units Included are 4 important, newly-established RLM Standards (Nos. 28-31) for industrial lighting units, designed to utilize the new, longer-length Slimline Fluorescent Lamps. Equipment conforming to these standards and bearing the RLM Label is now available. The minimum RLM Standards established for these Slimline industrial units are based upon extensive tests which have indicated these standards to be essential to satisfactory, efficient and economical performance.

Higher Reflection Factors Higher reflection-factor specifications for 12 RLM Units are among the important revisions to existing RLM Specifications contained in the new RLM Book. The reflection-factor increase from 79% to 82% brings users greater efficiency and more light for the money, widens opportunities for Better Planned Lighting; and increases the importance of specifying units bearing the RLM Label. If you specify, recommend, buy or sell industrial lighting equipment, a copy of this new book, "RLM Standard Specifications for Industrial Lighting Units", is available to you without cost or obligation. Write RLM Standards Institute, Inc., Suite 827, 326 W. Madison Street, Chicago 6, Illinois.

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The letters RLM stand for Reflector and Lighting Equipment Manufacturers

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That's what both contractors and operators say about the exclusive, new, TAP-TURN combination on the improved RAMSET DUAL-ACTION TOOL, for instant fastening into steel or concrete. Overhead, in floors, roofs, walls, and in tight spots, RAMSET seats the fastener in split-second time, with hair-splitting accuracy. It gets the job done faster, permanently and at lower cost.

Because of the wide variety in sizes and types of RAMSET studs and drive pins, you can specify the fastener required for fastening or anchoring work in steel, concrete, other building materials.

ASK FOR PROOF—IN 15 MINUTES

That's all your nearby RAMSET Specialist needs—15 minutes to demonstrate the outstanding features of RAMSET DUAL-ACTION and how they will slash fastening costs and get work finished faster. Ask for details and demonstration.

TAP IT . . .

OR TURN IT . . .

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Pioneer in powder-actuated fastening
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THE RECORD REPORTS

(*Continued from page 226*)

and the Engineering Institute of Canada already have formally agreed to participate. Nearly 100 other national, international and regional engineering societies will take part, as will the great engineering schools. The Department of State has stated its intention of cooperating with the Centennial in arranging for participation of foreign and international engineering organizations.

CIVIL SERVICE ANNOUNCES NEW EXAM FOR ARCHITECTS

A new examination for Architect has been announced by the U. S. Civil Service Commission to fill positions paying from $3825 to $5400 a year in various Federal agencies in Washington, D. C., and vicinity. Optional branches covered by this examination are design, working drawings and general.

No written test will be given. To qualify, applicants must have either completed a four-year college course with major study in architecture or have had four years' experience in architecture which would give them a thorough knowledge of the fundamental principles and theories of professional architecture comparable to that which would be acquired through successful completion of a full four-year college course.

In addition, applicants must have had from one to three years of experience (depending on the grade for which they apply) in professional architecture Graduate study in architecture may be substituted for professional experience up to a maximum of two years of experience.

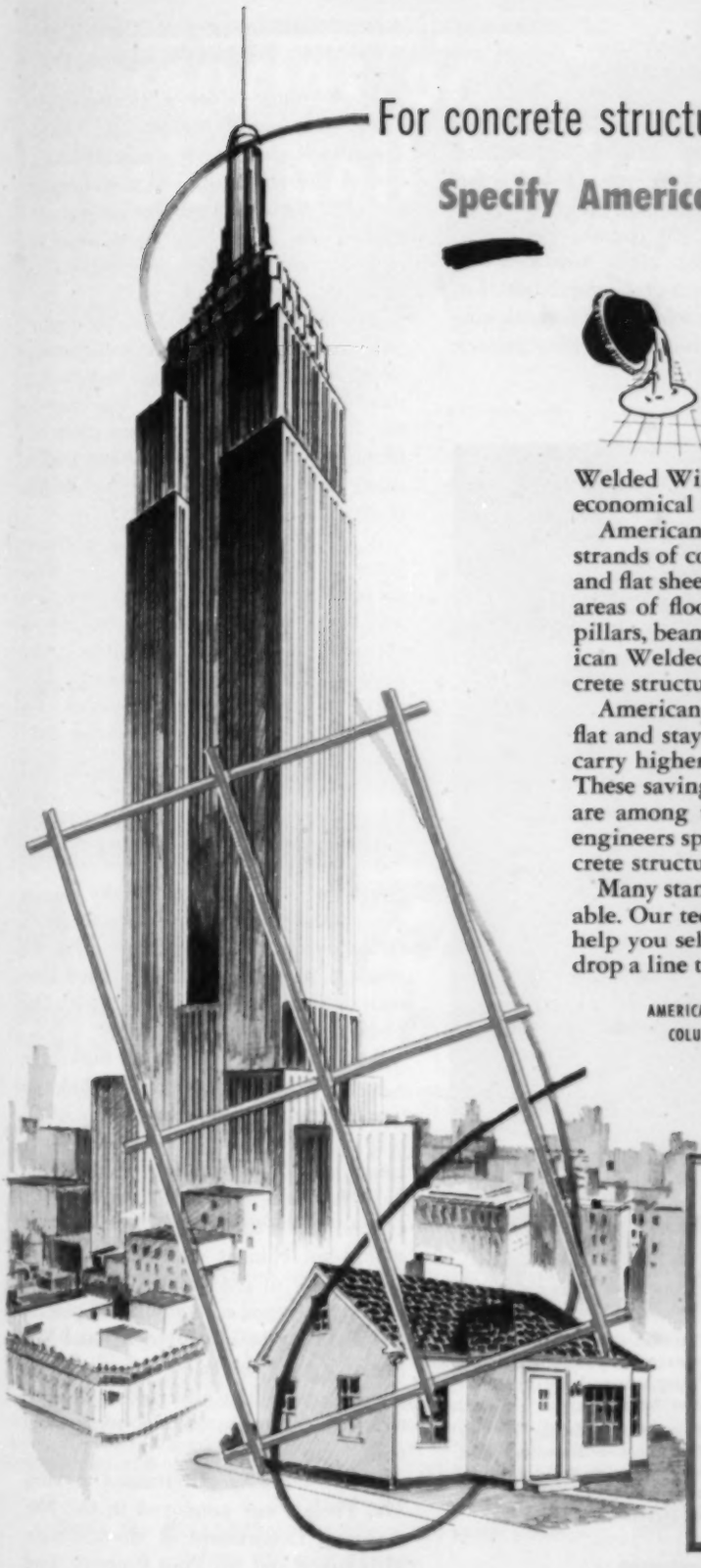
The age limits, 18 to 62 years, will be waived for persons entitled to veterans preference.

Full information and application forms may be obtained from most first- and second-class post offices, civil service regional offices, or the U. S. Civil Service Commission, Washington 25, D. C. Applications will be accepted until further notice.

PLASTICS SOCIETY ANNUAL MEETING BEGINS OCT. 18

The annual national conference of the Society of the Plastics Industry will be held October 18–20 in Swampscott, Mass., it has been announced by George V. Sammett Jr., program committee chairman.

(*Continued on page 230*)



For concrete structures large and small

Specify American Welded Wire Fabric

From the world's largest building to small homes—in schools and hospitals, in churches, stores, highways, bridges and viaducts—many of the countless uses of concrete construction are made possible by welded wire fabric reinforcement. And in an impressive number of them you will find American Welded Wire Fabric. It has proved to be the most efficient and economical reinforcement for all sorts of concrete construction.

American Welded Wire Fabric, with its many closely spaced strands of cold-drawn high yield point steel, comes in long rolls and flat sheets. Both provide continuous reinforcement for large areas of floors, walls and roofs. They can be fitted to girders, pillars, beams and other irregular structural shapes. With American Welded Wire Fabric you can reinforce all parts of all concrete structures.

American Welded Wire Fabric can be placed quickly, lies flat and stays in place during pouring. And, since thinner slabs carry higher allowable stresses, you need less steel, less concrete. These savings in construction time, in labor and material costs, are among the important reasons why so many architects and engineers specify U·S·S American Welded Wire Fabric for concrete structures of all sizes.

Many standard designs and sizes of fabric are now readily available. Our technical staff will be glad to supply complete data, to help you select the fabric best fitted to your requirements. Just drop a line to the nearest office on our list, there is no obligation.

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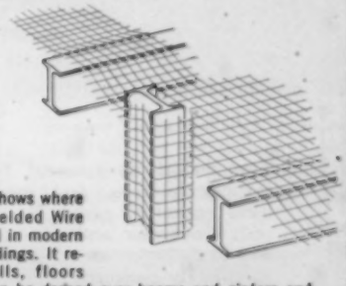


This sketch shows where American Welded Wire Fabric is used in modern concrete buildings. It reinforces walls, floors and roofs, can be draped over beams and girders and wrapped around pillars. Many uses of concrete in irregular structural shapes are made practical by American Welded Wire Fabric reinforcement.

Every type of concrete construction needs

AMERICAN WELDED WIRE FABRIC

reinforcement

USS

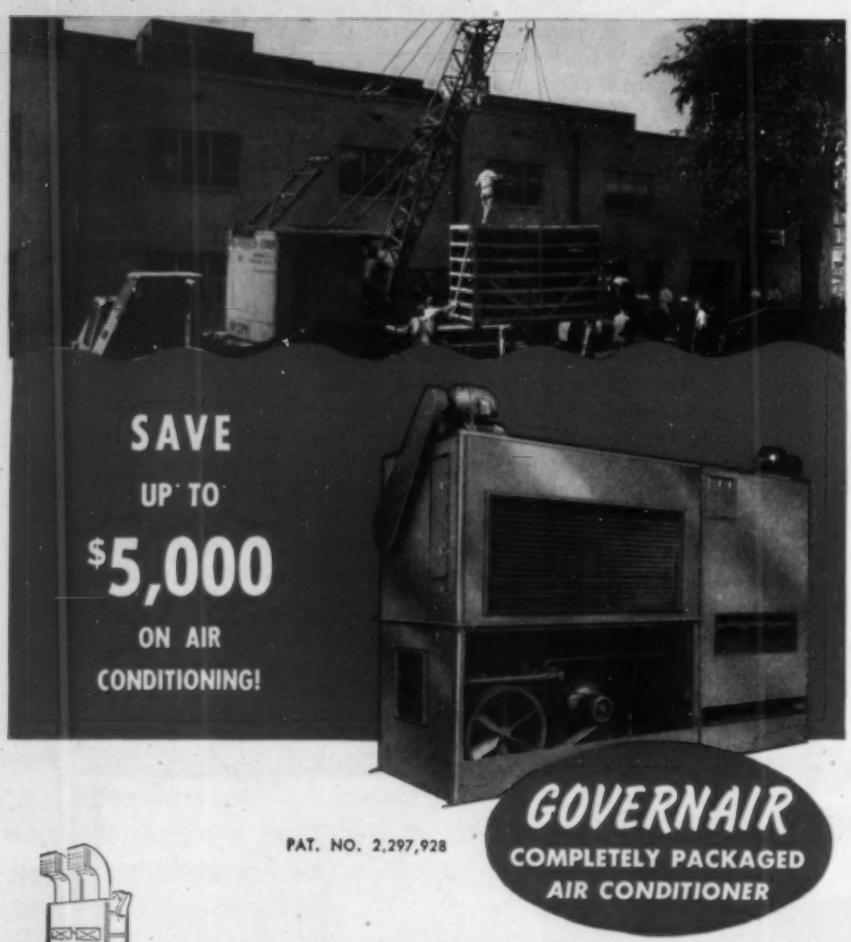
UNITED STATES STEEL

(*Continued from page 228*)

Some 400 persons are expected to attend the sessions, which will be held in cooperation with the Harvard Business School. Only members may attend.

Morning sessions will feature a program by Harvard professors on such topics as labor and pensions, production, executive development, industrial marketing and advertising.

Afternoon programs will deal with technical subjects, including mechanical properties of rigid plastics; manufacturing costs in molding; the future for moldings over 20 pounds; glass reinforced plastics; after treatment of molded articles; a photographic study of polystyrene molding; preplasticizing equipment for injection molding presses.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If you want the best—if you want the most economical and reliable air-conditioning unit on the market . . . CHOOSE GOVERNAIR and SAVE!
ORIGINATORS OF COMPLETELY PACKAGED AIR CONDITIONERS
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AEC PUBLISHES REPORT ON ATOMIC WEAPON EFFECTS

The Atomic Energy Commission's 450-page report, "Effects of Atomic Weapons," which made a macabre addition to best-seller lists late this summer, includes discussions of the general nature of the effect of a blast wave on building and detailed descriptions of structure reactions.

One of the 12 chapters of the report (Chapter V) reviews physical damage (from air blast, ground and underwater shock) to various types of buildings in the Japanese blasts, discusses probable effects in the United States, and makes some tentative suggestions for design of structures.

A new report on the design of structures to resist atomic blast has been prepared after review of the construction sections of the current report by a group of engineering consultants at the request of the National Security Resources Board. The new report is also scheduled for publication, but no date is set.

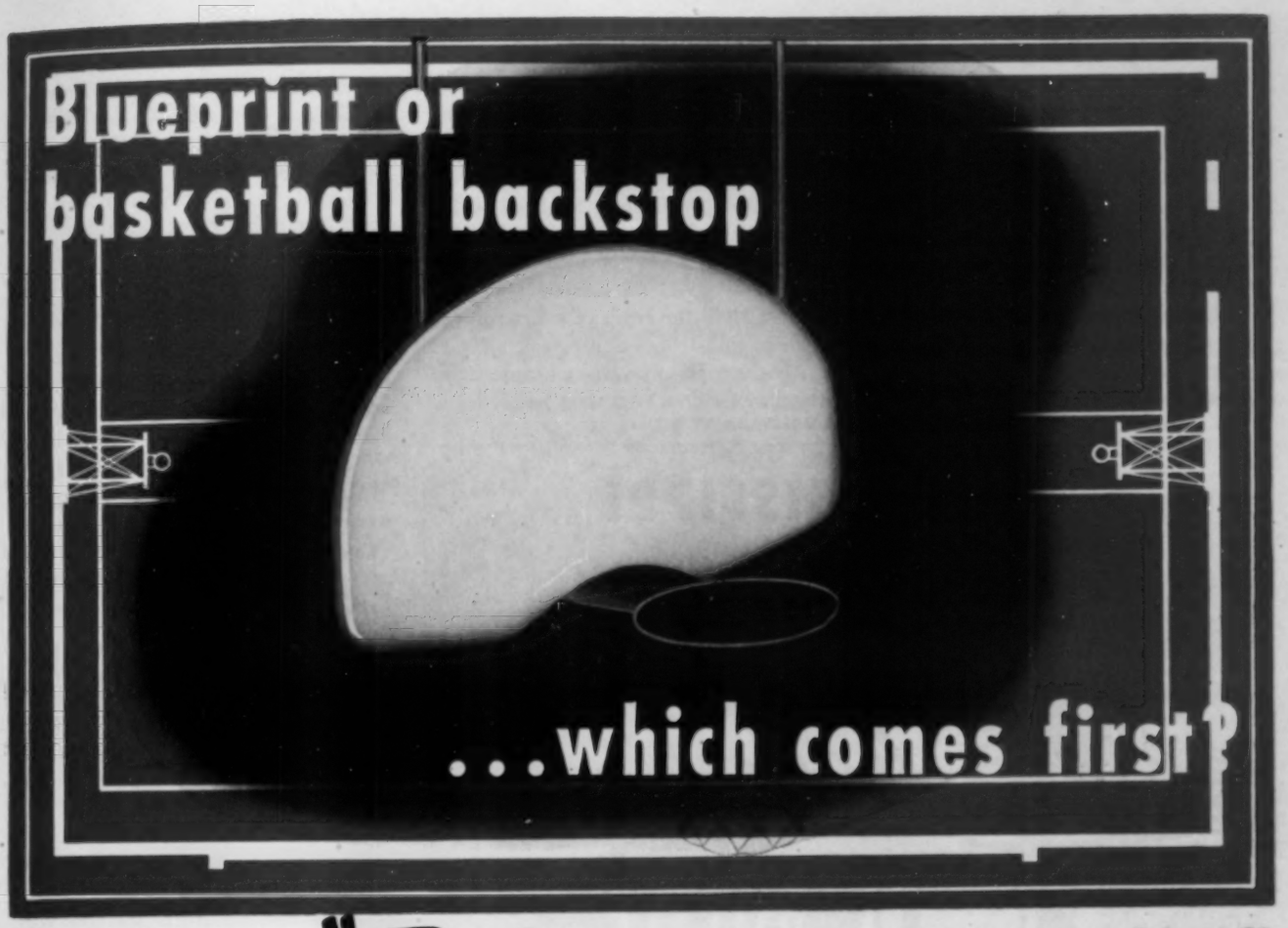
VINCENT PHELAN RETIRES FROM STANDARDS BUREAU

Vincent B. Phelan, nationally known as an authority on building construction, retired in August after more than 23 years of service with the National Bureau of Standards and 32 years with the Federal government.

At the Bureau, Mr. Phelan worked as a construction engineer in the Building Technology Division and took part in many of the investigations of the properties of building materials which form the basis for state and municipal building codes. He is the author of the best-selling government publication, "Care and Repair of the House." The book, now in its second edition, draws upon 50 years of NBS building research and Mr. Phelan's own extensive experience to present up-to-date information in non-technical language on the repair and maintenance of houses.

Before entering government service, Mr. Phelan was employed in the Engineering Department of the Chicago, Milwaukee and St. Paul Railway, and later by the construction firm of Bates and Rogers. Joining the Construction Division of the War Department in 1918, he was soon engaged in planning and constructing Army training camps, bases, port terminals and other military projects. After World War I, Mr. Phelan was employed by a number of govern-

(*Continued on page 232*)



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Yes! Tailored-to-the-job because Medart starts . . . with a blueprint. The structural conditions of your gymnasium will determine the most-economical-best-results-in-the-long-run, type of backstop assembly you will need. Strength, rigidity and elimination of backboard vibration are not the properties of backstops seen in a catalog . . . unless it is the RIGHT ONE FOR YOUR GYM! We at Medart feel that it is our job, through consultation and structural analysis . . . in short "blue-printing," to see that you get the right one!

Once that is determined you may select from the Medart complete line of backboards the kind best suited to your needs . . . and your budget. For instance, the popular new HERCULITE TRANSPARENT BACKBOARD (rectangular only)! Of extra-strong tempered glass, with an extruded non-rust, non-corrosive heavy and rigid metal frame, plus other safety factors, it has been scientifically designed to withstand the long vigorous test of actual play. Approved by the National Basketball Association! Other regulation backboards, fan-shaped or rectangular, available in wood and steel. Write for descriptive literature today. Feel free to consult our engineering department . . . it costs no more and results are sure with . . . Medart!

FM50-2

Write for descriptive literature : : : send your plans for suggestions.

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SWEET'S FILE (ARCHITECTURAL) NO. 23g—3a and 23c—8a

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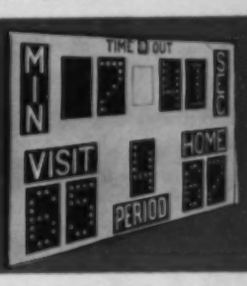
Leadership for over 75 years in School Equipment

Medart Telescopic Gym Seats in both Wall Attached and Movable types. High Row (up to 20 rows) and Recessed types. Write for descriptive literature. Send your plans for suggestions.



The very latest design in Basketball and Football Scoreboards for spectator visibility. Over 4000 in use! Write for descriptive literature.

(Continued from page 230)

ment agencies until he joined the staff of the Bureau of Standards in 1927. With the exception of a short interval when he was a research engineer with the Tennessee Valley Authority, Mr. Phelan has been with the NBS ever since. During World War II, he had charge of the design and construction of buildings and other facilities at the Bureau providing for war-induced expansion.

MATTHEW NOWICKI DIES IN AIRLINER CRASH IN EGYPT

Matthew Nowicki, acting head of the Architecture Department of the School of Design of North Carolina State College, was one of 55 persons killed on August 31 in the crash of a Transworld Airlines Constellation in Egypt.

Mr. Nowicki, who was en route from Bombay to New York, had left Raleigh last June 28, taking with him plans for a new capital city for the Punjab Province of India.

Mr. Nowicki came to this country from Poland to serve with the United Nations board of design. He took out first citizenship papers last spring.

OTTO K. JELINEK DEAD; AIRPORT, TRAFFIC ENGINEER

Otto K. Jelinek, airport and traffic engineer who was president of the Illinois section of the American Society of Civil Engineers, died August 18 in Brussels, Belgium, of a heart attack.

Mr. Jelinek, who had been touring western Europe with his wife and son, Otto, Jr., was a member of the consulting engineering firm of Ralph Burke, Inc., of Chicago. As a member of the firm, Mr. Jelinek was active in Chicago's expanded airport program, including the development of O'Hare Field on the northwest side.

Mr. Jelinek and Mr. Burke left the Chicago Park District in 1946 to form the firm of Ralph Burke, Inc. Mr. Jelinek was then head of the Planning Department, which was laying the groundwork for a $24 million expansion program, and Mr. Burke was chief engineer. James P. Gallagher is also a member of the firm.

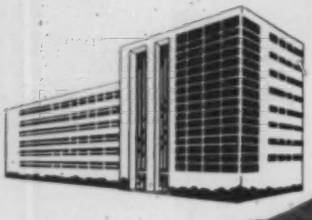
Before World War II, Mr. Jelinek had served as traffic engineer for the park district. In 1940 he joined the Office of Civilian Defense to take charge of camouflage and blackout operations, returning to the park district briefly in 1946 to complete 28 years of service with that body.

At the time of his death, Mr. Jelinek was chairman of the Transportation Committee of the Western Society of Engineers and a member of the Society of American Military Engineers, Chicago Plan Commission and American Road Builders Association.

ERRATUM

An article in the August 1950 issue of the RECORD describing the remodeling of the Western Saving Fund Society building in Philadelphia described columns in the banking room interior as "painted" a blue-green color. The columns are in fact covered from floor to ceiling with a special vinyl plastic sheeting. The RECORD regrets the error.

MISSISSIPPI WIRE GLASS helps...



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Now, more than ever before, it is necessary that constant vigilance is maintained and that every precaution is taken to insure against losses by fire.

Records show that many large loss fires result from exposure through ordinary glass windows.

Mississippi Wire Glass* affords constant protection at minimum cost in windows, doors, transoms, skylights, fire escapes, vertical shafts, partitions, exterior walls and all other places where fire or breakage protection is required . . . helps to avert tragic and costly fire losses that result from exposure through ordinary glass.

Specify Mississippi Wire Glass—the *original* solid wire glass upon which the Underwriters' Standard was based in 1899. Carried in stock by distributors of quality glass everywhere.

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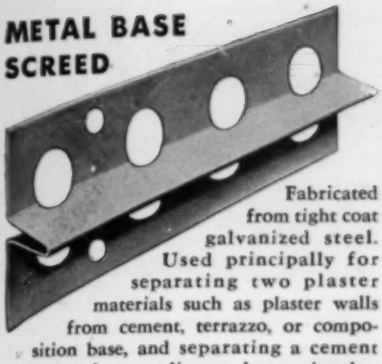
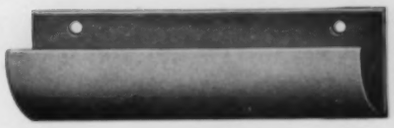
METAL BASE SCREED



Fabricated from tight coat galvanized steel. Used principally for separating two plaster materials such as plaster walls from cement, terrazzo, or composition base, and separating a cement wainscot from ordinary plaster. Another function is to give a permanent straight edge to which both trades work.

METAL CASINGS



Meet a definite demand for an artistic, sanitary method of trimming around doors and windows. Afford many architectural effects. Metal casings are fire-resistant, vermin proof, easy to maintain and do not shrink or warp.

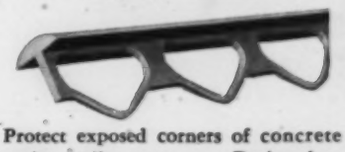
FERROBORD STEELDECK ROOFS

Truscon Ferrobord provides a fire-resistant, economical roof deck for all new construction or replacements. Covered with insulation and waterproofing, it weighs approximately 5 pounds per square foot.

INTERMEDIATE LOUVER WINDOWS

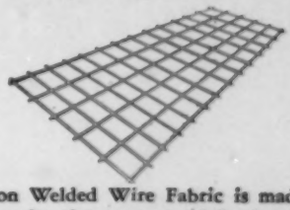
For typical hospital, school, office or institutional buildings requiring the majority of window units in normal size openings. Provide special features offering unusual operating convenience at minimum cost.

CURB BARS



Protect exposed corners of concrete curbs, walls, steps, etc. Designed to give positive anchorage into the concrete. Plate surrounds and protects the corner without splitting concrete into two portions.

WELDED WIRE FABRIC



Truscon Welded Wire Fabric is made in various sizes for concrete reinforcing in all types of structures. Each joint is electrically welded for permanence.

CONCRETE REINFORCING BARS

A special rolled section of high grade steel, with a series of longitudinal and diagonal ribs, so designed to provide the maximum bond with the enclosing concrete.

PRESSED STEEL INSERTS

Truscon Slotted Inserts are attached to the forms and are completely imbedded in the concrete. Bolt can be moved along slot to any location, allowing wide variation in position. Used in ceilings, slabs, beams or columns.

OPEN TRUSS STEEL JOISTS

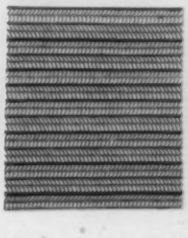
Truscon developed the open truss steel joist to meet the demand for economical, light weight, fire-resistant floors in schools, and other light-occupancy buildings. They are easy to install. Completely shop fabricated, they reach the job ready for placing.

CLERESPAN JOISTS

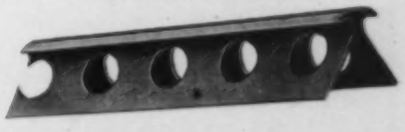
Truscon "Clerespan" Joists meet all clear span requirements up to 80 feet. They eliminate undesirable columns and provide greater unobstructed floor areas, in gymnasiums and auditoriums.

METAL LATH

There is a Truscon Metal Lath for every plastering requirement. Flat laths for ceilings and sidewalls; rib laths to reinforce concrete floors or plaster ceilings; expanded laths for stucco reinforcement; Corner Beads and Cornerite, to protect outside and inside corners.



CORNER BEADS



Recommended as an exposed corner reinforcement. The round nose is strongly reinforced by a deep groove which holds the plaster flush for a perfect bond. It can be wired, stapled or nailed to any kind of wall construction without the use of clips.

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CANADA

(*Continued from page 18*)

Contract Awards at High For Seven Months of 1950

Construction awards for the first seven months of 1950 show a whopping total of $737 million — an increase of $119 million over the same period a year ago. The total for July of $151 million was up 17 per cent over July 1949. Figures come from Maclean Building Reports Ltd.

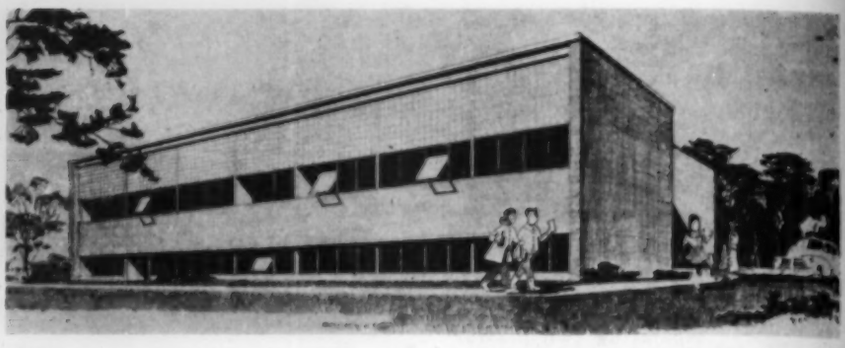

Photo of rendering shows Roman Catholic public school for separate school board, Etobicoke, Ont. Architect for the building is L. E. Venchiarutti of Toronto

New construction jobs include Ontario Highways Department contracts for maintenance and paving totaling $12 million; a $2 million pipe-line for the prairies; Central Mortgage & Housing buildings in Rockcliffe, Barriefield, and Deep River, totaling over $3 million. Rimouski, recovering after a devastating fire, plans an orphanage and sash mill at over a million dollars each.

Comparative July figures for the four classifications show a gain in each case, with the exception of engineering:

Residential — 1950, $74,181,800; 1949, $52,195,000.

Commercial — 1950, $41,629,800; 1949, $32,714,100.

Industrial — 1950, $7,009,100; 1949, $4,378,700.

Engineering — 1950, $28,219,100; 1949, $39,981,200.

Residential Construction Sets First Quarter Pace

New construction work in the first quarter of 1950 set a record of $383 million, an increase of three per cent over the same period in 1949. Figures are from Central Mortgage & Housing Corp.

Residential construction was the pace-setter. Housing starts during the first three months of this year were six per cent higher than in 1949, while other construction rose less than two per cent.

An interesting sidelight is the big role the government is playing in the present housing situation. Almost one half of the 8854 dwelling units started during the first quarter were C.M.H.C.-sponsored or assisted through National Housing Act loans.

That the boom will keep rolling seems likely, for "Housing in Canada" reports

(*Continued on page 238*)

Greetings to the Class of 1999 from

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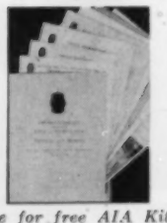

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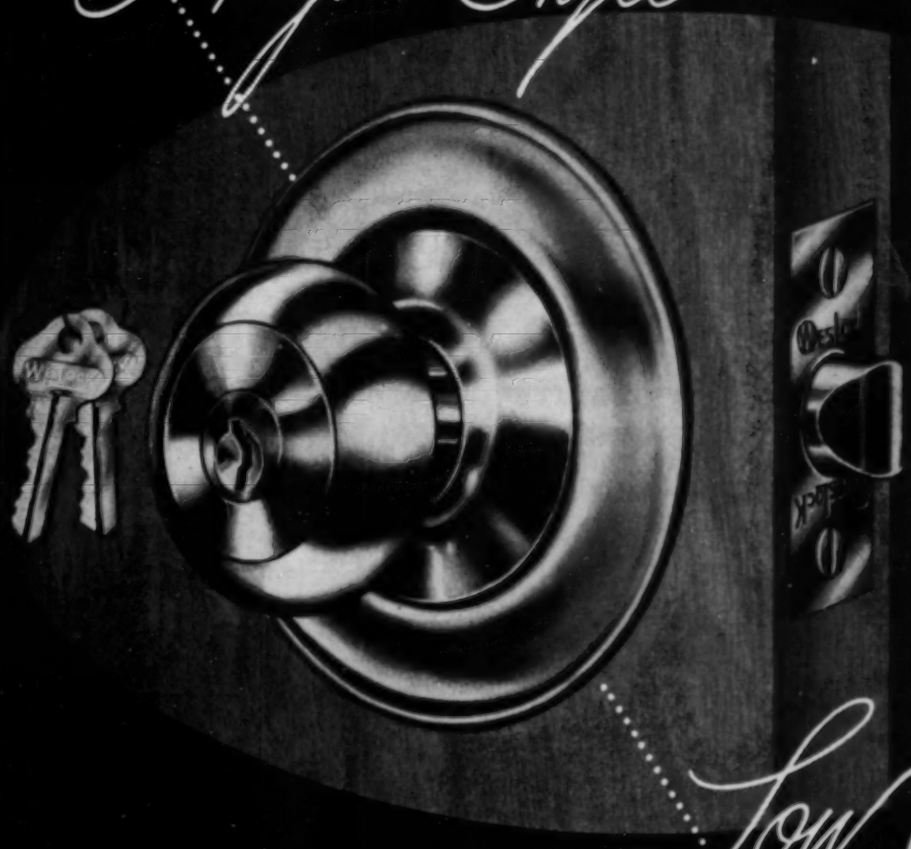

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CANADA

(*Continued from page 236*)

that seven out of Canada's 10 provinces have now signed agreements under the plan for federal-provincial cooperation in initiating housing projects.

Considering the production of building materials during the first quarter, "Housing in Canada" states that the output of materials increased about six per cent over the same period last year. The output of lumber alone declined, due to fewer overseas orders and bad weather conditions. The decline, plus increased American demand for Canadian lumber, caused the present situation of tight supply and rising prices in this field.

Photo of rendering: Sarnia General Hospital, Sarnia, Ont. Architects are Govan, Ferguson, Lindsay, Kaminker, Maw, Langley and Kennleyside of Toronto

Research Agency Divided For Expanded Program

The Building Research Division of the National Research Council has been split into two branches. One will deal with active research, the other with building practice.

The new arrangement was made necessary by the greatly increased construction activity in Canada, which has brought tremendous additional work to the Division.

Building practice is defined as including the library, preparation and distribution of Division publications, and the handling of inquiries on construction matters addressed to the Council. Work on the National Building Code (at present under revision) comes under this branch.

Citizens' Planning Group Offers Promotion Ideas

Canadians interested in healthy community growth may soon see the principles of town planning dramatized on the screen, if the suggestion made at a citizens' planning conference is followed. The hope is to collaborate with the National Film Board in producing movies to serve as visual aids for planning.

The conference, sponsored by the Community Planning Association of Canada in Hamilton recently, came up with a fistful of good, progressive ideas. Members will attempt to get the On-

(*Continued on page 240*)

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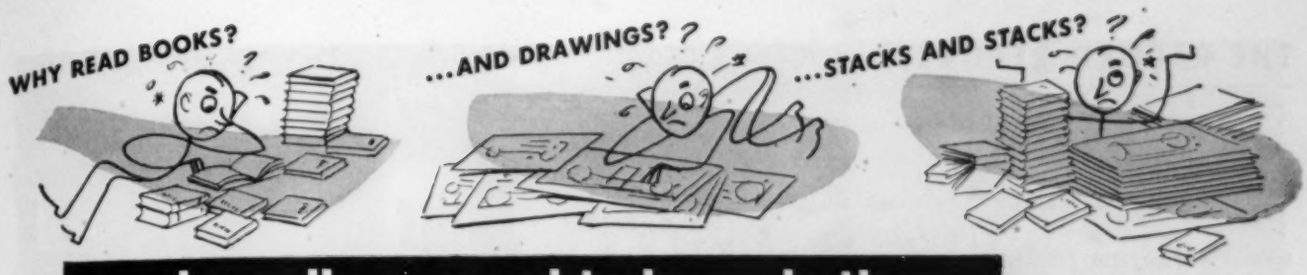

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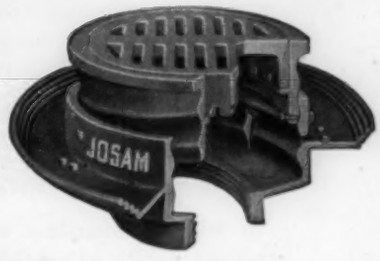

JOSAM LEVELEZE ADJUSTABLE TOP FLOOR DRAINS

Josam Leveleze Floor Drains solve the problems caused by variations in floor levels. The adjustable top is completely detachable from drain body and is held in position by a set screw until the floor construction sets. Where the drain has been set too high or too low in concrete floors, formerly it was necessary to tear out floor construction, disconnect drain, remove nipple, install new nipple, reconnect drain at proper level and patch floor. NOW all that is required is to chip out finish, loosen adjustable top, adjust top to proper elevation and patch finish. Drain body and arch are not disturbed. Time and labor are saved; costs reduced and low spots resulting in unsanitary water pools are eliminated.

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CANADA

(*Continued from page 238*)

tario Planning and Development Department to sponsor a model demonstration project in regional planning on the Niagara Peninsula. They recommended a simpler procedure by which a municipality may acquire, hold, sell or lease land and make it available in accordance with an official plan. Amendment will be sought of present statutes to empower municipalities to demand that occupancy permits be obtained before any change of use or occupancy. And they suggested the Ontario Planning Act be altered to require that municipalities obtain the recommendation of the medical officer of health before approving any proposed plan of subdivision.

Panda photography

Collegiate Institute, Forest Hill Village, Toronto, one of the best equipped secondary schools in Canada, even has own broadcasting station. Page & Steele, Architects

C.P.A.C. Publishes A New Guidebook on Subdivision

If future communities were as well designed and attractively laid out as the handbook just published on the subject by the Community Planning Association of Canada, land development worries might be over.

"How to Subdivide" by H. Spence-Sales, associate professor of architecture at McGill University, is both tract and testimony. As a tract, it attempts to convert the developer who builds large-scale shelter projects, and the subdivider who lays out lots for sale, to the practical advantages of good land planning. As testimony, it offers superb aerial photos and base maps, as well as reference — in great detail — to an actual operation on the Island of Montreal.

In his introduction Professor Spence-Sales points out that the developer is being forced to go farther and farther into the country for land. No longer hamstrung by regulations that divide it into a gridiron of uniformly sized building lots, he has a perfect chance to employ new concepts of subdivision.

The C.P.A.C. handbook forms an admirable guide. The first section deals with background information on land subdivision. It places the blame for those rows on rows of stereotyped houses on the fact that years ago, Crown lands

(*Continued on page 242*)

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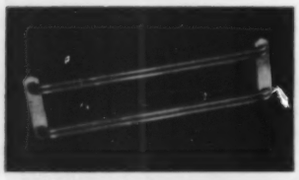

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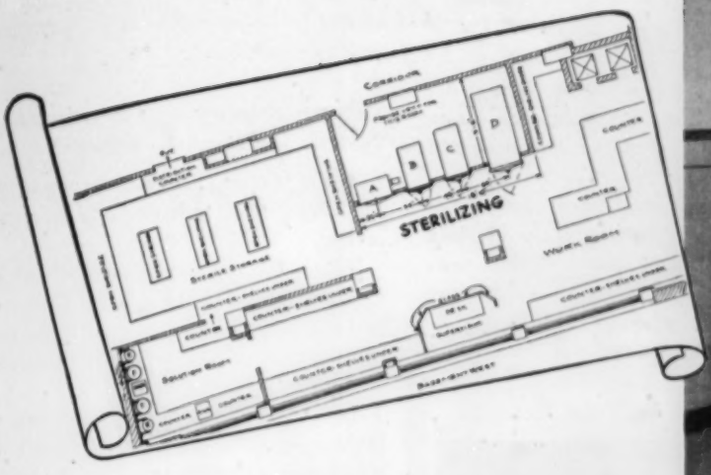

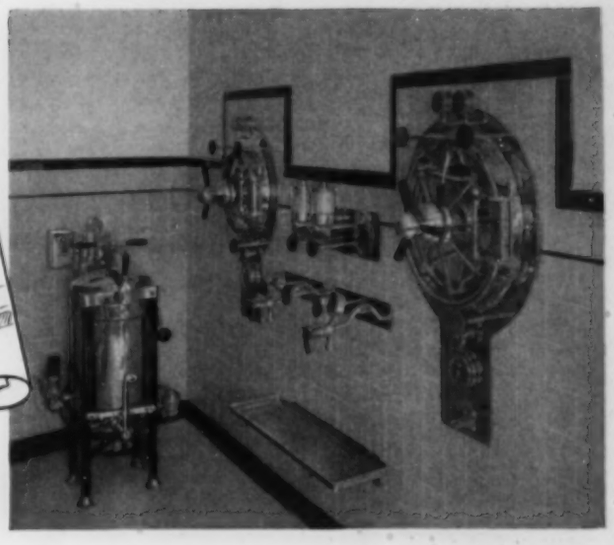

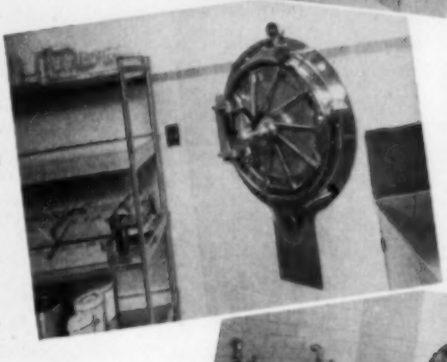

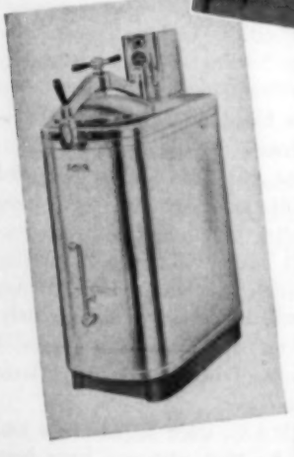

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LIGHTS AND STERILIZERS

CANADA (*Continued from page 240*)

were laid out for agricultural use, not for urban needs.

Professor Spence-Sales explains that today's developer should seek land parcels of a size and shape that allow for better layout. They should be, not long and narrow, but square. And the physical features of the land, instead of being obliterated, should be put to attractive use.

The author gives a step-by-step description of how to subdivide, from studying the local market for housing to the selection of landscaping material. Much attention is given to the task of working out the pattern of the building area — open space, street system, sewage disposal and so on — all with the aim of siting the houses in pleasing variations. Financial aspects of the venture are presented, and sound planning is shown to be profitable and efficient as well as satisfying.

Citizen Apathy on Planning Scored by Toronto Official

Town planning interests professional planners — and not the citizens concerned.

That's the opinion of City Planning Commissioner Tracy LeMay of Toronto, given in a paper read for him at the recent American Society of Planning Officials conference in Los Angeles.

The only citizens who show active interest in town planning are the few who make a hobby of civics, he said. The rest say, in effect, "Leave us alone."

To back up his case, Mr. LeMay cited 18 public meetings in Toronto, called to discuss a report on the city's official plan, which drew audiences of about 100 each.

In his report Mr. LeMay also noted that Canadian cities spend less on planning than their American counterparts; and he explained that this is not due to planners' lack of vision, but rather to the meagre assistance provided at present. A forthcoming Dominion-Provincial Conference may evolve a plan whereby Ottawa will shoulder more of the costs of social services, and Mr. LeMay hopes that this will leave provinces and municipalities with more cash to spend on planning.

Town Planning Progress In Canada Gets Analysis

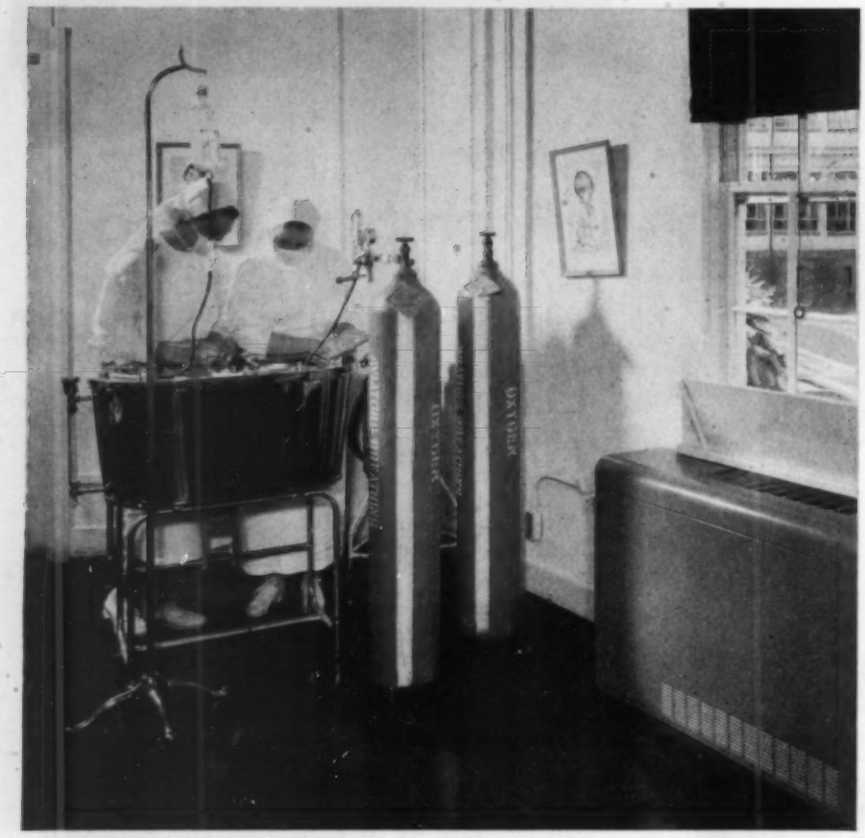
In a recent issue of its Newsletter, the Community Planning Association of Canada takes a frank look at the progress of town planning in Canada.

Noting the tremendous postwar expansion in houses, factories, schools and shops that has occurred on the fringe of Canadian cities, C.P.A.C. sees these new areas "devoid of order, efficiency and grace" and restates its belief that "there are better ways to create a community than every-man-for-himself."

Warning that the newly-expanded National Housing Act may mean more helter-skelter building, the article suggests that rather than merely buying and preparing residential land, planning skills should be employed immediately, to work out sites, sizes and shapes of plots, types of houses, street patterns and so on.

Has C.P.A.C. itself failed in its job? "It may be that planners have been

(*Continued on page 244*)



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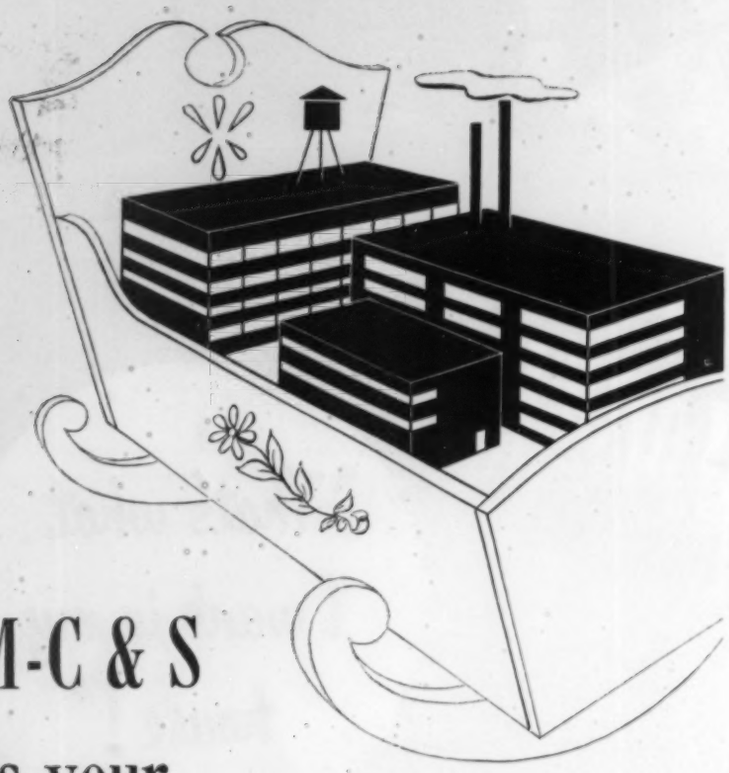

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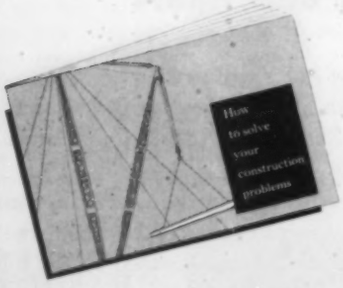

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THE RECORD REPORTS

CANADA

(*Continued from page 242*)

tackling areas too small, with prestige too slight, resources too scant and knowledge too sketchy to be effective," bluntly summarizes the Newsletter.

On the credit side, there is a good deal to be pleased with: three planning schools where before there was none; consolidation of adjoining areas for planning study and for local government and development; overhaul of planning machinery in Edmonton and Vancouver; formation of the Institute of Professional Town Planners.

The Newsletter notes an increase in planned city building, and feels that in the final analysis "Canadian community planning is growing up." To keep pace with that increasing stature, the Association is reorganizing its publications. Newsletter in the future will contain brief notes and notices; an expanded Canadian journal of planning, "Layout for Living," is to appear quarterly and will carry articles and reviews in both English and French. Members of the Association receive both publications.

Architects Run Legal Risks, Journal Article Points Out

The Journal of the Royal Architectural Institute of Canada has launched a series of articles on architects and the law that deserves close attention. Reading can benefit tyros and masters alike. Author is Arthur L. Fleming, K.C., solicitor for the Institute.

Pointing out that R.A.I.C. members' demand for construction contract forms is five times as great as their demand for architect-client forms, Mr. Fleming comments that apparently architects will run risks themselves which they do not approve for their clients.

"The architect as a professional man owes it to his client not to lead him into responsibilities, particularly to his architect, of which the client is ignorant or which he may not fully understand. The architect can avoid this by using a good client-architect form and he should have the moral courage to place such a form before his client before he commences his work.

"No architect should feel very happy in collecting fees from a client who is

(*Continued on page 246*)

"...the best darn building in New York"

On the way to the dedication of the new Parke-Bernet Galleries a taxi-driver told William A. Delano, president of the Municipal Art Commission: "That's the best darn building in New York."

Said Mr. Delano: "If that be the judgment of a taxi-driver, I am sure it will make even stronger appeal to that decreasing number of our citizens who do not drive taxis."*

The new Parke-Bernet Galleries Building, where world-famous collections of art reach the auction block, is proof that distinction in commercial building pays. It is outstanding in every detail – from the modern classical design of Architects Walker & Poor to the heating and mechanical equipment designed by Consulting Engineers Syska & Hennessy.

Heating of the 4-story, block-long building is by low-pressure steam . . . A Webster Moderator System of Steam Heating provides the temperatures desired automatically. Webster Supply Valves and Traps on radiators and convectors, Webster Drip Traps and Webster-Nesbitt Unit Heaters assure efficient heating.

Find out why modern steam heating under Webster Moderator Control is first choice for heating today's new buildings.

*As quoted in "Journal of the American Institute of Architects," January 1950.

Parke-Bernet Galleries Building, 76th St. and Madison Ave., New York. Owner: City Investing Co. Architects: Walker & Poor. Consulting Engineers: Syska & Hennessy. Heating Contractor: Jarcho Bros., Inc. Architects for Interior: Eugene Schoen & Sons.

Address Dept. AR-10

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Be sure—use Michaels high-quality products—products you can count on for dependable service and long life — products which far outweigh any advantage you may gain by using questionable materials that look good when new, but do not give lasting service.

A partial list of Michaels products is shown. We shall be glad to work with you on any building project.

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Bank Screens and Partitions	Lamp Standards	Kick and Push Plates
Welded Bronze Doors	Marquises	Push Bars
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Check Desks (standing and wall)	Wrought and Cast Radiator Grilles	

The MICHAELS ART BRONZE CO., Inc., 234 Scott St., Covington, Ky.

THE RECORD REPORTS

CANADA

(*Continued from page 244*)

really ignorant of his responsibility until informed of it by his lawyer or charged with it by the court. If, however, the client has signed the standard form, there need be no misgivings about asking him to observe its provisions."

R.I.B.A. Annual Reception for Foreign Visitors Considered

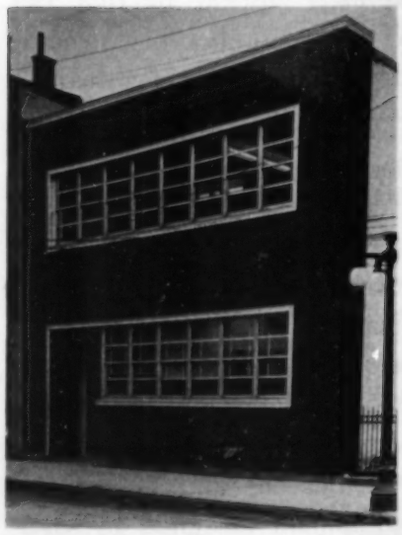
Miss Mary Bilton, secretary of the R.A.I.C., has sent to each provincial architectural association a copy of an interesting letter received from C. D. Spragg, secretary of the R.I.B.A. It reads:

"My Council have been giving consideration to the possibility of holding annually an informal reception to which would be invited architects and students of architecture from the British Commonwealth and the U.S.A. who may be visiting or temporarily resident in the United Kingdom.

"The aim of these receptions would be to introduce such visitors to members of the Institute and to each other, to welcome them to the United Kingdom and to inform them of the facilities and assistance which the Royal Institute can

(*Continued on page 248*)

Linguard photographers



The Journal Building, Ottawa, Ont., has Verde Frejus, fine Italian marble with serpentine effect, for exterior, unusual for Canada, where climate gives marble a really severe test. Cecil Burgess of Ottawa was architect for the building

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Get trouble-free construction with no limit to mantel design

YOU can design *any style* fireplace around the Heatilator Fireplace unit. Whether modern or traditional, you'll assure your clients of smokeless, trouble-free operation and the extra comfort of circulated heat!

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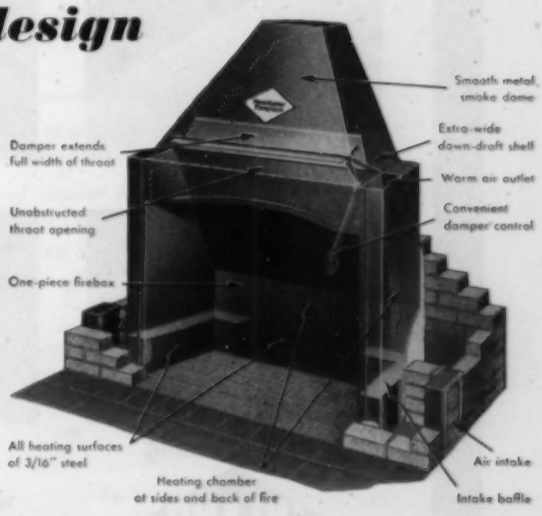

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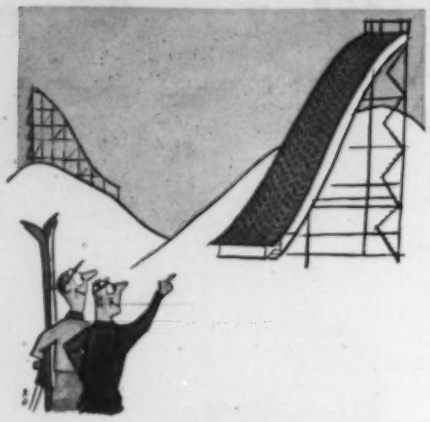

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CANADA

(*Continued from page 246*)

give to visiting members of the profession.

"The reception would be held early in October, probably in the early part of the evening, and married visitors would be invited to bring their wives."

It sounds like an excellent idea, and poses the question: could not something similar be arranged by the R.A.I.C. and The A.I.A. for visitors to these shores?

Royal Bank of Canada Opens Modern Branch at Islington

A one-story building of contemporary design has been erected by the Royal Bank of Canada for its branch at Islington, Ont.

The building, which has limestone facing and stone trim, was designed by E. C. S. Cox, an Islington architect.

Outside, the name of the bank is displayed in modern, stainless-steel letters with 4-in. relief, extending around the curved entrance corner.

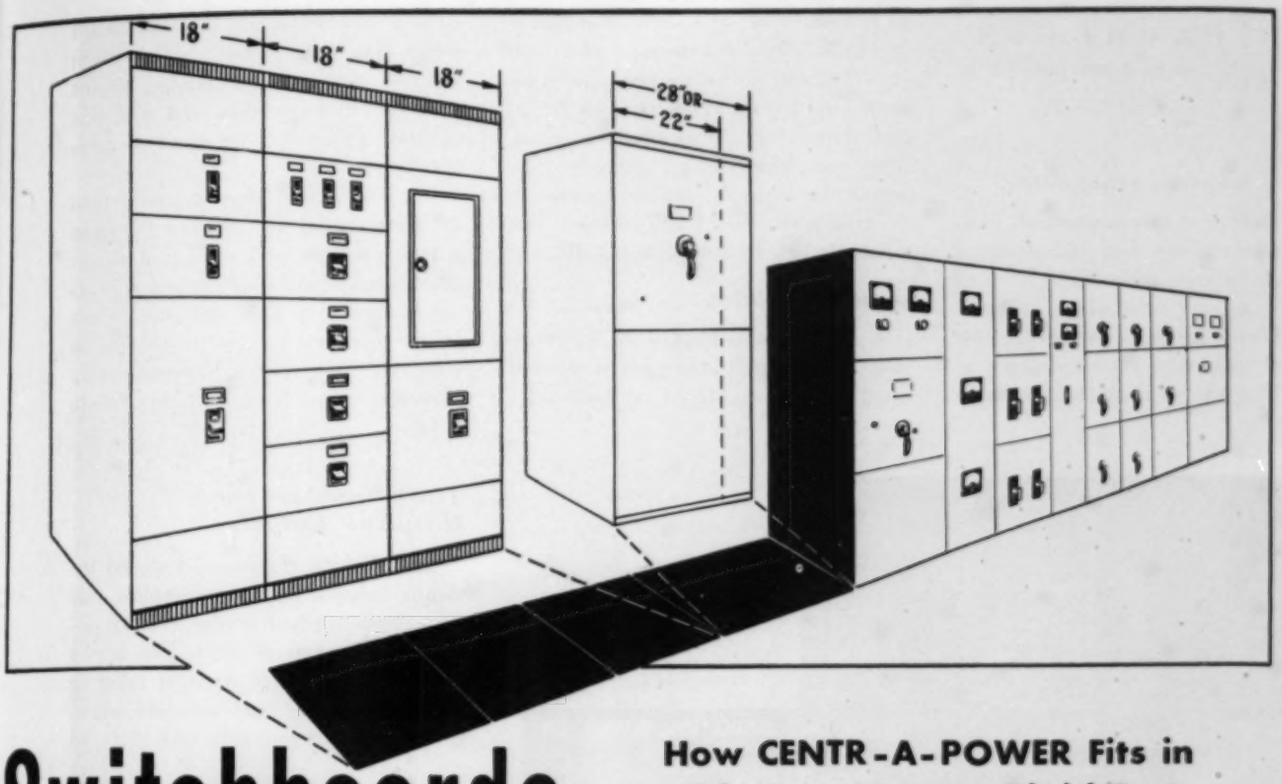
The site has been occupied by the Royal Bank of Canada for nearly 30 years. When it was decided to replace the old structure, the Bank cooperated with the Township of Etobicoke Council to provide new space for widening the street. The building was set back an additional six inches from the building lines, which allows for a well-landscaped strip, enclosed within a low stone wall, on both elevations. At Islington's main intersection, an improvement has thus been achieved for the whole corner, the architect reports.

"Miracle Mile" Idea Spreads

Edmonton may be the first Canadian city with a "miracle mile" of shops, offices and public buildings; but it won't be the only one — not for long.

According to L. E. Detwiler of First New Amsterdam Corporation, New York, both Montreal and Vancouver are warming up to the scheme.

Present plans call for a $10 million project in Montreal and a $6½ million center in Vancouver. The two projects will be operated on the same principle as that instituted in Edmonton. The Corporation will get a 69-year tax-free lease, in exchange for $50,000 yearly rent and a share of the profits.



Switchboards

...at money-saving prices

To save you money on installation time and maintenance costs, Trumbull has designed a new type of switchboard for complete low voltage (600 V and under) switching requirements. Because of pre-engineering and standardization, you can now have the highest quality construction at the lowest possible cost. Here are some of the features:

Pre-fabricated, rigid steel troughs can be placed in any arrangement to provide a completely dead-front, totally-enclosed switchboard. Wiring gutter design is such that load wiring is isolated from incoming load bus. Compact switch or breaker units, called CENTR-A-PLUGS, are easily mounted or removed. A quick-clip attachment saves time in installation, inspection and maintenance. Self-aligning latches replace bolts and nuts. Positive connection to bus bars is assured by use of spring-loaded, reinforced stabs. Each CENTR-A-POWER unit self-contained and electrically isolated from adjacent units.

How CENTR-A-POWER Fits in with Your Present Rigid Type Switchboard Equipment

CENTR-A-POWER is made from three standard troughs, all 90 in. high. At left is unit type CENTR-A-POWER with 18 in. trough; it handles fusible switches through 200 amp. and circuit breakers through 600 amp. Two standard section troughs are indicated in the center. Type A is 22 in. wide, handles 400 and 600 amp. fusible switches. Type B is 28 in. wide, handles fusible switches through 1200 amp. and circuit breakers through 1600 amp.

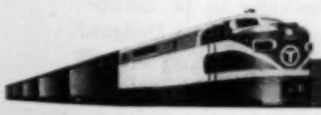
Unit-Type Troughs (18 in.) are furnished assembled or unassembled. Large standard sections are furnished assembled only.

ASK ABOUT TRUMBULL CENTR-A-POWER CONTROL CENTERS

which are of similar construction and line up mechanically and electrically with CENTR-A-POWER Switchboards.

New Free Bulletin—Address The Trumbull Electric Manufacturing Company, Plainville, Conn. Ask for Bulletin TEB-3.

TRUMBULL (T) ELECTRIC



TRUMBULL'S TRAINLOAD OF NEW PRODUCTS

PRODUCTS
(*Continued from page 185*)

Plastic-Asbestos Floor Tile

Vitachrome is a grease resistant, plastic-asbestos resilient floor tile, designed for use in cafeterias, restaurants, kitchens and food serving areas. It is said not to be affected by animal and vegetable fats, and to have a good resistance to alkali. The tile is manufactured in a wide variety of sizes, and is available in 10 marbelized colors and 5 plain colors. The latter are for use only as feature strips and inserts. The tiles can be installed over concrete or wood sub-floors. They are claimed to be highly flexible, permitting them to conform to uneven floor surfaces. The Tile-Tex Div., The Flintkote Co., Chicago Heights, Ill.

Expansion Joint

A new *Fiberglas Expansion Joint* consists of an asphalt impregnated, bonded glass wool board, faced on both sides with a heavy asphalt-saturated kraft paper. The joint is designed for use in concrete highways, sidewalks, airport runways, factory floors and wherever concrete pavements are used in large areas.

The joint is said to recover more than 70 per cent of its original thickness within one hour with no loss of weight after compression. The expansion joints are claimed to be light and durable, not to decompose or rot, and to provide no sustenance for vermin. Owens-Corning Fiberglas Corp., Nicholas Bldg., Toledo 1, Ohio.

Track Hardware For Hospital Cubicles

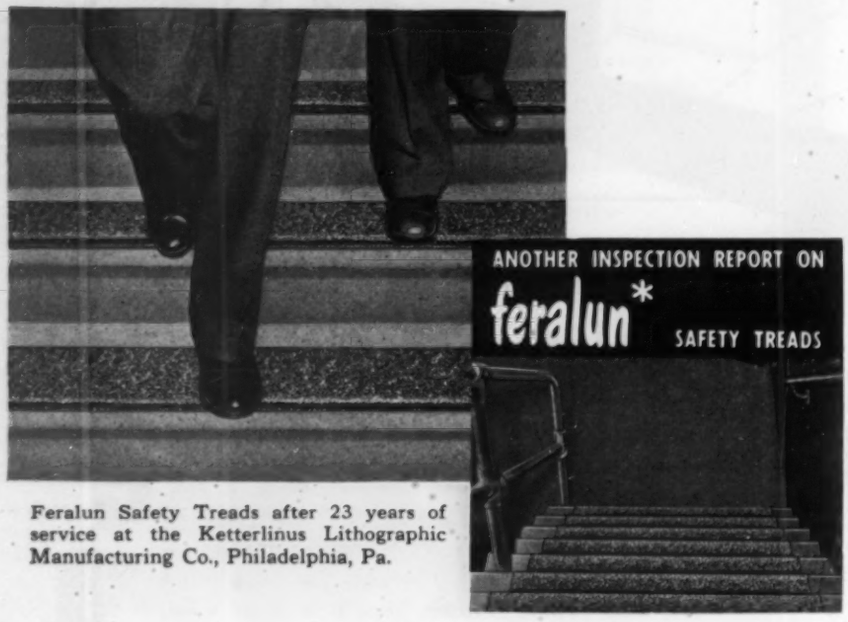
Grant Cubicle Hardwear, designed for sliding hospital curtain assemblies, features built-in construction with all operating parts out of sight. The tracks are made of 19 gage wrought brass or zinc coated steel and notched where necessary for removable end stops to permit the fastening of curtains to the track. For curved tracks, wrought brass elbows with a 12-in., 90 deg radius are connected to the straight sections with wrought brass splicers. The carrier bodies and rollers are made of Tenite, a durable, heat-resistant and chemically inert material used to eliminate metal to metal contact. Operation is said to be silent and smooth. Each carrier is fitted with a brass chrome plated eye and a stainless steel extension hook. Grant Pulley & Hardware Co., Broadway at 57th St., Woodside, N. Y.

Hospital curtain track features noiseless operation of carriers, removable end stops

Pictorial Plastic Panels

Warerite plastic panels, an English product on display at the U. S. International Trade Fair in Chicago, employ a technique permitting any painted or printed design in color to be incorporated in rigid plastic laminates. Designed for use as murals, table and counter

(*Continued on page 254*)



Feralun Safety Treads after 23 years of service at the Ketterlinus Lithographic Manufacturing Co., Philadelphia, Pa.

"... no signs of wear after 23 years"

There's a lot of daily traffic between departments of this busy lithographic company, yet for 23 years Feralun Safety Treads have withstood the punishment of thousands of hurrying feet—with "no signs of wear."

A quarter-century of resistance to wear—a quarter-century free from maintenance and repairs—*and* a quarter-century of underfoot safety, too, on Feralun's non-slip surface with many years of service ahead.

Examples like this show why architects, engineers and builders insist on Feralun treads, nosings and plates. Made of cast iron with wear-resistant abrasive particles securely embedded in walking surfaces, including the nosings, Feralun provides a sure-footed "grip" that keeps feet from slipping—and wears and wears. The coupon below will bring you full information on Feralun. Send it today.

Also available in Bronze, (Bronzalun)—Aluminum, (Alumalun)—and Nickel Bronze, (Nicalun).

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Bethlehem Longspan Joists in Food Warehouse, Charlotte, N. C.

FOR Greater FLOOR AREA USE *Longspans*

Whatever type of light-occupancy structure you may be planning to design, you can be sure of greater usable floor area when you use Bethlehem Longspan Steel Joists.

Bethlehem Longspan Joists are ideal for supporting the roofs of industrial buildings, such as warehouses, factories and garages, because they eliminate interior columns in floor areas up to 64 ft across. Besides, they reduce the need for pilasters, and save construction time, as pipes, conduits and ducts can be run through the open webs of the joists. Longspan Joists can also be used in floor construction.

Bethlehem Longspan Joists come fabricated and marked, ready for installation. They are made in two types: (a) underslung construction with top-bearing ends, and (b) bottom-bearing construction with square ends. They have cambers of approximately ½ in. for 30-ft spans, ¾ in. for 40-ft spans, 1 in. for 50-ft spans, and 1½ in. for 60-ft spans.

Plan to include Bethlehem Longspans the next time you design for unobstructed floor area. Full details can be obtained from the nearest Bethlehem representative. Or, if you find it more convenient, get in touch with us at Bethlehem, Pa.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation

BETHLEHEM LONGSPAN JOISTS

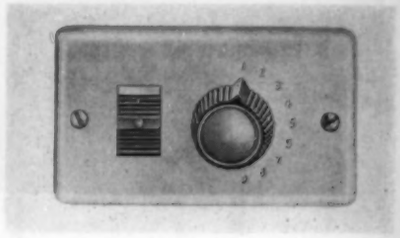
BETHLEHEM STEEL

PRODUCTS
(Continued from page 252)

tops, signs and notices, the plastic panels are said to be impervious to grease, moisture or steam, and to be unaffected by alcohols, fruit juices or hot beverages. It is made in a cigarette-proof quality and is not stained by burning cigarettes. Because its colors and patterns are an integral part of the plastic sheet, painting and redecoration charges are reduced to a minimum. Warerite Limited, Export Dept., 18, Grosvenor Gardens, London, S.W.1, England.

Remote Control Wiring System

An extensive remote control system, employing new General Electric devices, has been devised for the Joseph M. Adzima house on Pinewood Lake, Trumbull, Conn. Architect Victor Civkin designed the house for a doctor whose hours are very irregular, making flexibility of inside and outside lights advisable.



Remote control electrical system uses thin wires (above), has selector switch for 9 outlets (below)

The system uses lightweight thermoplastic remote-control wire, which can be stapled to joists, etc., and can be used where full voltage conduits cannot be readily installed. The 24-volt system can carry full rating of fluorescent lamp loads. *Master Selector Switches, GE3652,* control principal circuits. The unit is of the rotating type, with separate on and off switch, and controls one or all of 9 circuits. General Electric Co., Bridgeport 2, Conn.

Plastic Material

Kalistron, a plastic covering material, has color fused to the underside of a transparent vinyl plastic sheet. It is protected further by a suede-like backing. The method is claimed to prevent any scuffing or abrasion of the colored surface. The material is available in 30 standard colors; special colors can be matched if desired. The plastic is pliable and designed for applying to walls, upholstered furniture, bar surfaces, etc. It is claimed to be spot and flame resistant, and not to chip, crack or peel. It is cleaned with a damp cloth. U. S. Plywood Corp., 55 W. 44 St., New York 18, N. Y.

(Continued on page 256)

ROMANY TILES
ARE REAL TILES
ROMANY TILES
ARE REAL TILES
NO TILE SO GOOD
We are very proud of this tile. We believe it represents the highest skill and the best manufacturing process that can be attained. Used extensively in schools, hospitals and other public buildings, as well as in commercial and residential structures, ROMANY—the real clay tile—has gained the fullest confidence of leading architects and contractors. For long life, for sanitary hard glazed surface, for steadfast colors in a wide range of selection, ROMANY TILE is worthy of your specification by every evaluation.
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UNITED STATES QUARRY TILE CO
Member: Tile Council of America
217-H FOURTH St., N. E.
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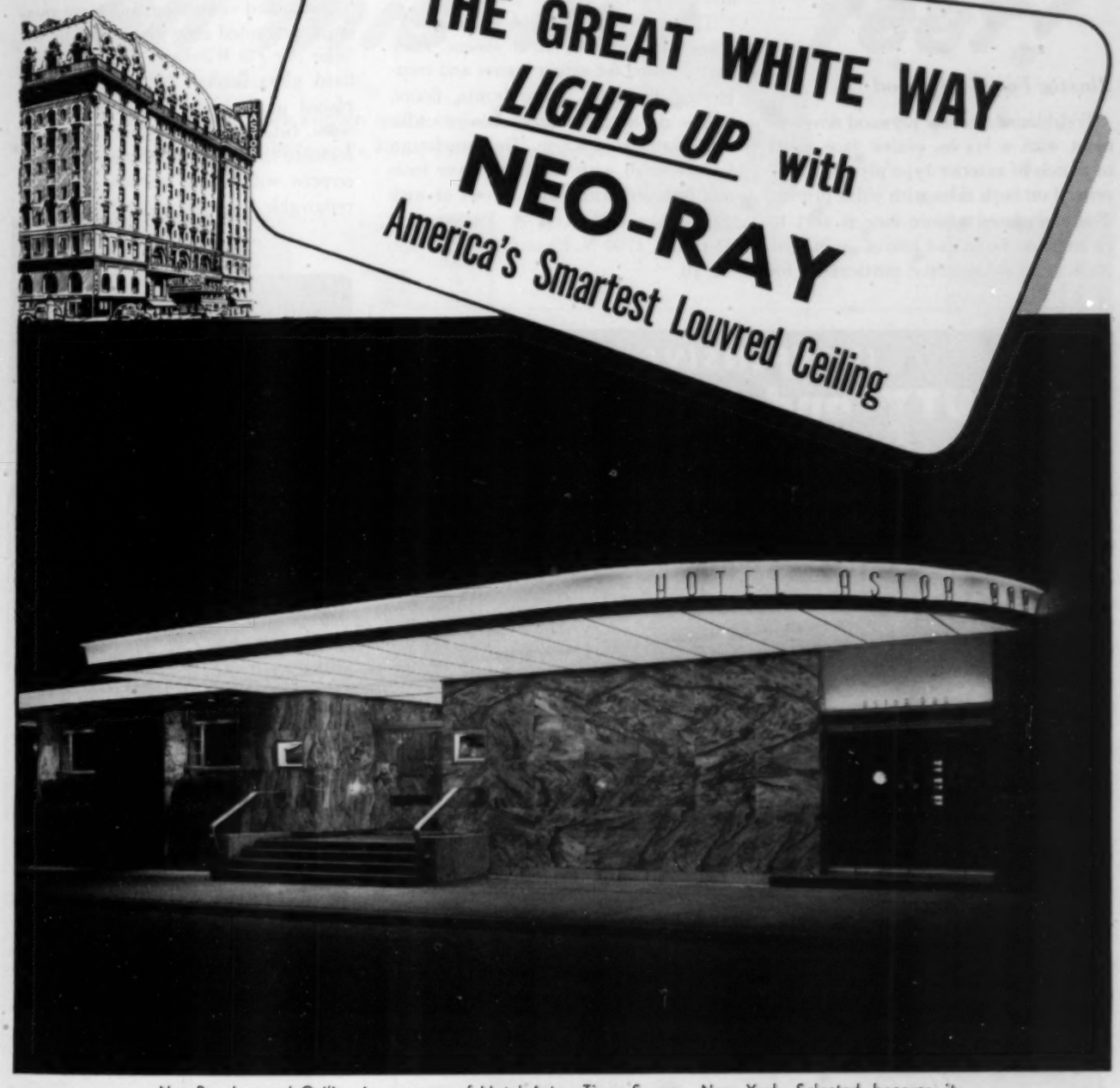
THE GREAT WHITE WAY LIGHTS UP with NEO-RAY

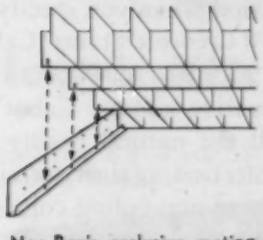
America's Smartest Louvred Ceiling



Neo-Ray Louvred Ceiling in marquee of Hotel Astor, Times Square, New York. Selected because it maintains perfect alignment under all climatic conditions . . . . never a wavy or corkscrew effect.

Designers: **The Walter M. Ballard Corp.**

More and more specifications call for Neo-Ray. And no wonder! It's the louvred ceiling that maintains perfect alignment under all conditions . . . that's adaptable to every type of ceiling . . . that's so easy and simple to install. On that next louvred ceiling job — can you afford to overlook the many exclusive and patented features of Neo-Ray?



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Gives complete engineering data and lighting tables for each item in our complete line of fluorescent, slimline, and incadescent fixtures.

Plus

New simplified spot lamp tables for computing light intensities in show windows and all highlighted areas.

NEO-RAY PRODUCTS, INC.

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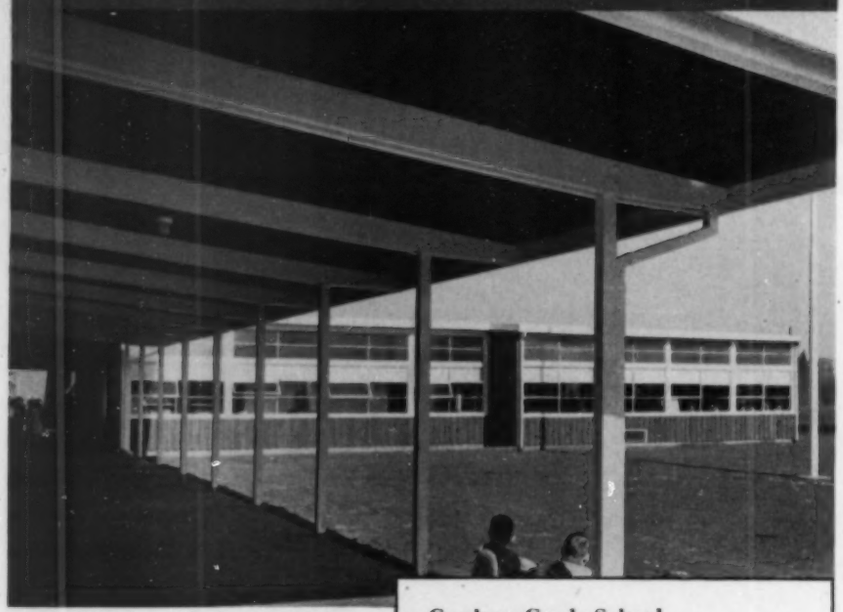
PRODUCTS
(Continued from page 254)

Plastic Faced Plywood

Welchboard is a new plywood development with a 1/16 in. plastic face fused to panels of exterior-type plywood, and primed on both sides with paint primer. The resin-fused plastic face is said to be smooth, dense and free of grain, giving it good paintability, particularly for high-gloss enamels. The material is claimed to be split-proof, puncture-proof and completely weather-proof.

The panels are available 3/8 in. thick, 4 by 8 ft and 4 by 12 ft sheets. They may be used for siding homes and commercial buildings, store fronts, floors, garage doors, table tops, shower stalls, refrigerator rooms, etc. The panels can be machined with hand or power tools and fastened with nails, screws or with glue. Aetna Plywood & Veneer Co., Dept. K., 1750 N. Elston Ave., Chicago 22, Ill.

INEXPENSIVE
BEAUTY and PROTECTION
FOR SCHOOL CONSTRUCTION



Creslane Grade School,
Lane County, Oregon

Architects—Wilmsen and Endicott, Eugene, Oregon

Exterior cedar boards and batts finished with Cabot's #247 Creosote Stain

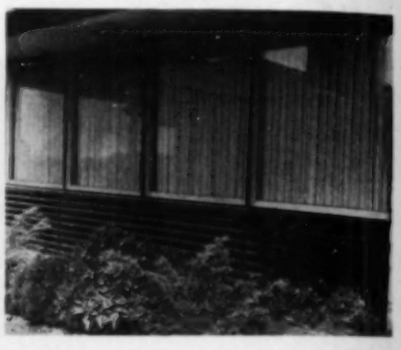
INSIST ON CABOT'S CREOSOTE STAINS

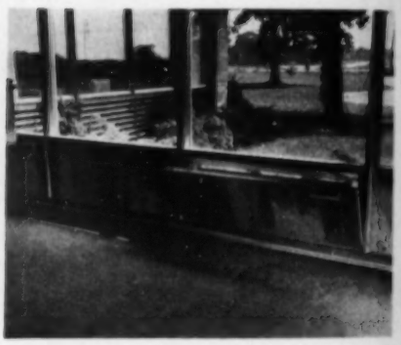
You can achieve striking exterior effects and at the same time assure long-lasting protection when you specify Cabot's Creosote Stains. Cabot's Stains cost 1/3 as much as good paint. Contain 60-90% of refined creosote oil — best wood preservative known. Cabot's Stains penetrate deeply . . . bring out all the natural beauty of grain and texture . . . add years of protection against termites and decay. Available in a wide variety of non-fading colors — clear, brilliant hues to weathering browns and grays.

WRITE TODAY for Cabot's Creosote Stain Color Card and complete information. Many Cabot's Creosote Stain colors are unique and available from no other source. Samuel Cabot, Inc., 1049 Oliver Bldg., Boston 9, Mass.

Combination Window and Louver

Controlled ventilation and large areas of unobstructed glass are offered by the *Solar Air-Flo Windows*. The units have fixed glass flanked by baffled louvers placed as desired, at top, bottom or sides. Interior doors behind the louvers regulate the flow of fresh air. Concealed screens within this section are easily removable from the inside for cleaning.





Window units with ventilators present simple louvers on exterior (above), tilt-out doors for air control on interior (below)

The complete unit may be obtained with frames of treated wood or extruded aluminum, and can be installed in frame or masonry walls or in construction combining both. Glazing may be single, double or triple plate glass. Heat loss is reduced by weather stripping and insulation. Both interior and exterior trim are furnished with the units, which are available in stock sizes or in made to order specifications. Solar Air-Flo, Inc., Dept. A., Elkhart, Ind.

Ultraviolet Light Tubing

Corning Black-Light Blue tubing, which has the glass coated with an ultraviolet emitting phosphor, was developed to enable designers to obtain the

(Continued on page 258)

All this-in 5 feet!

If you need more kitchen space in your remodeling or building plans, look at Hotpoint's Five-Foot Electric Kitchen.

The perfectly matched arrangement of this packaged electric kitchen provides—

- The amazing Hotpoint Electric Range with four Calrod® heating units. The large capacity automatic oven also has a hi-speed broiler.
- The Hotpoint Cabinet Sink is adaptable for the installation of a Disposall® garbage disposer.
- Hotpoint four-cubic-foot under-counter refrigerator is covered by beautiful Textolite counter-top to provide an astonishing amount of work surface.
- Thirty-inch wall cabinets furnish plenty of storage room for dishes, etc.

★ If space permits, the Hotpoint Automatic Electric Dishwasher (rapidly becoming a required appliance) can be added.

COMPLETE Hotpoint Electric Kitchen

Write to Hotpoint Builders Division or ask your Hotpoint distributor to give you all the facts about this amazing, streamlined, compact and complete Hotpoint all-electric kitchen. It will solve your space problem.

Hotpoint Inc.
(A General Electric Affiliate)
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Ranges • Refrigerators • Dishwashers • Disposalls® • Water Heaters • Food Freezers
Automatic Washers • Clothes Dryers • Rotary Ironers • Cabinets

PRODUCTS
(Continued from page 256)

striking lighting effects possible with luminescent and fluorescent paints and materials. Unlike many "black-light" devices, the filter is incorporated in the lamp itself.

The manufacturers expect the lamp to find extensive use for new and unusual lighting effects to emphasize decorations in restaurants, night clubs, theaters and bars, as well as for outdoor night advertising, bulletin boards and window displays. Corning Glass Works, Corning, N. Y.

Sliding Door Hardware

The *Universal Self-Adjusting Rolling Door Assemblies* feature self-adjusting spring tension built into the top rollers and swivel action wheels. These compress for easy installation, removal or reversing of doors. The spring tension is claimed to permit use of all space between ceiling and floor, and to compensate for uneven floors or ceilings. The lower sheave has an adjustment to correct tilted or off square openings.

The assemblies are made of rustproof, case-hardened steel. All wheels have ball bearings and rubber tires for smooth, noiseless operation. The units may be used on any size wood, hollow metal, flush, panel or composition doors. Roll-A-Door Hardware Corp., Div. of Standard-Keil Hardware Mfg. Co., Inc., 639 Broadway, New York 12, N. Y.

Portable Bleachers

The *Wayne Standard Rolling Gymstand* provides extensive seating for gymnasiums with minimum demands on space. When not needed, the stands can be closed flat against the wall, or, since each row moves out successively, the stands can be left partially open to use any desired number of rows. The stands are mounted on a steel frame and have detachable swivel-caster trucks. No floor bolts, tracks or wall fixtures are required. The stands are said to be easy to move. Wayne Iron Works, 148 N. Pembroke Ave., Wayne, Penn.

Folding bleachers are shown above in closed, partially open and open positions

Odorless Paint

A variety of new finishes and colors are now available in the *Keystone* line of odorless paints. The products have been developed to alleviate some of the problems of indoor painting during the colder months. The oil paints are made in flat, semi-gloss and full lustre finishes. Fifteen colors are available in flat finish; gloss finishes may be obtained in ten pastel shades. The company announces that it expects to produce a complete line of interior paints without odor by the end of the year. Keystone Varnish and Paint Corp., Brooklyn, N. Y.

(Continued on page 260)

STATE OF ILLINOIS BUILDING, 160 N. LaSALLE, CHICAGO.
Architects: Naess & Murphy

Again—REVOLVING DOORS REPLACE SWING DOORS

The majority of all new revolving door installations today are replacements for swing doors. The majority of all revolving doors installed are International-Van Kannel.

see our CATALOG in SWEET'S FILE ARCHITECTURAL

REVOLVING INTERNATIONAL-VAN KANNEL DOORS

1806 EDGAR STREET EVANSVILLE, IND.

William Arild Johnson, A. I. A.

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with Glued Laminated Timbers, the Modern Structural Material

Spaciousness . . . impressive appearance . . . functional planning . . . low building costs — all these are accomplished by glued laminated timber members of Timber Structures, Inc.

For here is functional construction at its best. Architects appreciate the freedom of design and the striking effects obtained with this truly modern material; and with the glued laminated members supplying both architectural embellishment and primary structural members, the resulting low final cost is welcomed by the school administrators.

Glued laminated members are formed of kiln-dried material, "shop grown" to the exact shape specified by the designer. Stronger than sawn timbers of equal size, they remain free from dimensional changes and seasoning blemishes. Choice of finish includes hand rubbing, paint and stain.

A brochure entitled "Engineering in Wood for Modern School Buildings" outlines some of the uses of engineered timber in construction of classrooms, gymnasiums, field houses and other school buildings. A copy is yours for the asking. See your nearest Timber Structures office, or fill in and mail the coupon.

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City_____ Zone____ State_____

PRODUCTS

(Continued from page 258)

Drinking Faucet

A new *Haws* sanitary drinking faucet is especially designed for use in prisons and mental institutions. All working elements are concealed in the wall, exposing only a small button and shielded, angle-stream, anti-squirt heads. When pressed, the button valve releases a stream of water over a wall basin. There is no need for users' hands to contact the water opening. The unit is claimed to be tamper-proof. Haws Drinking Faucet Co., Berkeley 10, Calif.

Decontamination Liquid

Sana-Gene, a new liquid product, has been developed for industrial and institutional use to destroy contaminated and infested articles. The liquid preparation is used with a foot-controlled disposal container with an inter-removable steel drum. With one gallon of the liquid placed in the drum, it is claimed that all soiled and infectious articles placed therein are liquefied into a pulp which can be flushed down any ordinary drain with a complete elimination of any odors. The liquid is also said to remove existing sludge and other damaging elements from plumbing drains and traps. Sana-Gene Corp., 424 W. 42nd St., New York 18, N. Y.

Garbage Disposer

The *Waste King Pulverator* garbage disposer is said to have new mountings and connectors which keep noise and vibration from penetrating through walls, sink tops and plumbing. Three models are available. Rough-in dimensions from the underside of the sink bowl to the wall waste outlet are: 5½, 7 and 10 in. The smallest model is designed for installation to existing sinks where the waste line is near the underside of the sink. Given Manufacturing Co., 3855 Santa Fe,, Los Angeles 11, Calif.

Lighting Units

Recessed, skylight-like lighting units, shielded by Plexiglas panels, are used in many of the main offices and reception areas of the Lone Star Cement Corp. headquarters in the new skyscraper at 100 Park Ave., New York City. The corrugated plastic panels are laid on 1½ by 1½ by ¼ in. aluminum T-frames. Fluorescent lamps are mounted 11½ in. above the panels to eliminate shadows. Wiring is on two individual circuits to provide a choice of two levels of illumination. The plastic panels are said to have a transmission factor of 60 per cent, and to provide an even distribution of light over the entire area with minimum surface brightness. The Frink Corp., Long Island City, N. Y.

Plastic shields lights for reception area

(Continued on page 262)

BETTER Colors WITH Premium Quality

BETTER Wear

BETTER Floors

AZPHLEX ASPHALT TILE

There are four good reasons why Azphlex grease-resistant asphalt tile offers such remarkable qualities:

1. ***Tremolite Talc,*** its mineral filler, is highly stable, and totally resistant to alkalis, acids and other chemicals. It is fine-grained and microscopically fibrous.
2. ***Asbestos Fiber*** used in Azphlex is of the Chrysotile variety, noted for its fine texture, flexibility, strength and resistance to fire.
3. ***Thermoplastic Binder*** is a polystyrene—a scientifically proportioned composition of low molecular weight—which is plasticized with aromatic, petroleum-derived oils and is unaffected by moisture, acids, alkalis, oxidation, etc. Uniformity and perfect blending are assured because the binder is cooked at high temperature in large batches.
4. ***Color Pigments*** used in Azphlex are permanent and alkali resistant.

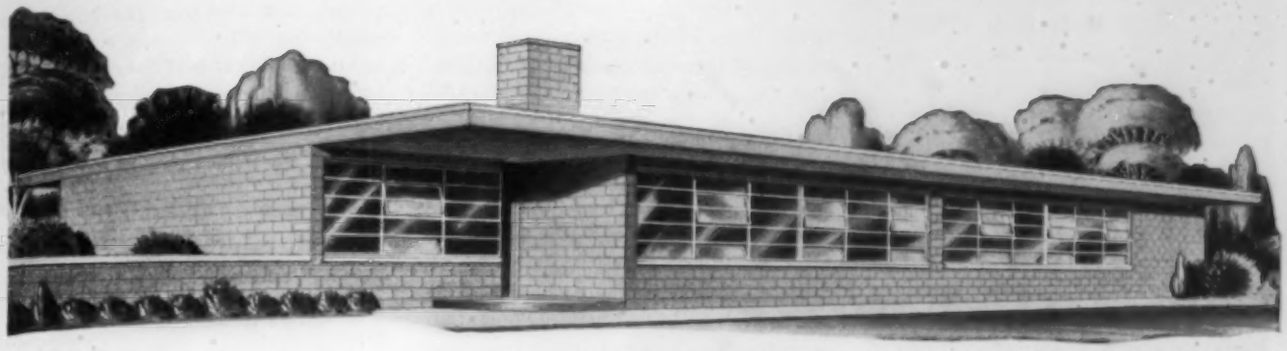
AZROCK ASPHALT TILE AZPHLEX ASPHALT TILE MEMBER ASPHALT TILE INSTITUTE

When you specify grease-resistant, premium-quality Azphlex Asphalt Tile—you can *know* that you're giving your clients better, longer-lasting floors at lower cost. *Get full information and sample tiles from your AZROCK-AZPHLEX Dealer, or write to Dept. C.*

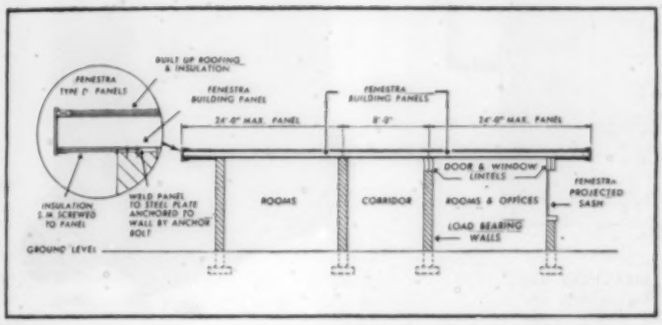
UVALDE ROCK ASPHALT CO.

Makers of AZROCK and AZPHLEX Asphalt Tile

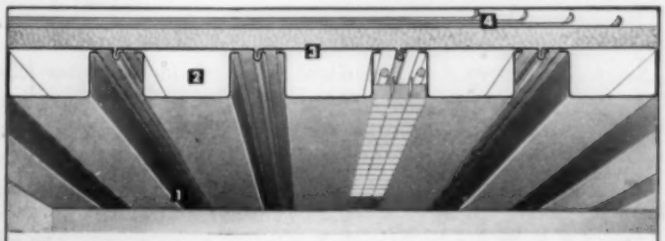
FROST BANK BLDG. • SAN ANTONIO, TEXAS



SCHOOLS FOR ONLY 60¢ a cubic foot *



Interlocked Panels are simply welded to small plates mounted on top of concrete block walls.



1. Channels for wiring or lighting units.
2. Space for pipes and ducts.
3. Flat, prime-painted surface, ready for built-up roofing.
4. Roofing.

Cancel the cost of structural steel. You don't need purlins. Or girders. Not with long-span Fenestra** "D" Panels and load-bearing walls of concrete block. And you have ceilings your builders just paint—not plaster. More costs cut!

Lightweight Fenestra Type D Building Panels are strong and structural themselves. They are quickly laid and interlocked to span from wall to wall, and their cellular, box-beam underside forms a beautiful finished ceiling. Their flat, smooth top surface gives you a rugged roof, ready for insulation and built-up roofing.

Fenestra "D" Panels are noncombustible . . . easy to maintain . . . versatile. If you wish, their box-beams can be perforated and backed with insulation to soak up sound. Or you can use the cells to carry large pipes and ducts. You can run long lighting units in the space between the cells.

Count on this new multi-purpose panel package when you plan to build. It's structural material, finished ceiling, rugged roof, built-in acoustical treatment, safety measure against fire—all in one. Also available are "AD" Panels, which have a flat surface, top *and* bottom. For complete information on the particular panel to fit *your* budget, mail the coupon and save money.

**Trademark

*They built big, beautiful Robert N. Mandeville High School in Flint, Michigan, for example, for *less than* 60c a cubic foot. Fenestra Building Panels (and Windows and Doors) were used throughout.

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Use our 25 Years' Experience in Metal Panel Engineering

DETROIT STEEL PRODUCTS COMPANY
Building Panels Division
Dept. AR-10, 2252 E. Grand Boulevard
Detroit 11, Michigan

Please send me, without obligation, information on Fenestra Building Panels.

Name _____

Company _____

Address _____

PRODUCTS
(*Continued from page 260*)

Refrigerator Defroster

New models of the *Shelvador* line of refrigerators incorporate an automatic defrosting system which defrosts the freezer plates at 24-hour intervals, quickly enough not to affect frozen foods, ice cream or ice cubes stored in the freezer compartment.

When set for automatic operation, a timer turns off the refrigerating mechanism and turns on heating elements under the freezer plates daily. Defrost water runs through a tube to a pan in the compressor compartment at the bottom of the refrigerator. There it is evaporated by slight heat from the compressor and normal air circulation. The evaporator pan never needs to be removed or emptied. When the defrosting is completed, the refrigerating operation automatically resumes. The refrigerator also can be placed on manual control at any time. Keeping the plates constantly free of frost is said to assure the most economical and satisfactory performance of the refrigerator. Crosley Div., Avco Manufacturing Corp., Cincinnati, Ohio.

Baseboard Convector

The *Kritzer High Output Baseboard Convector* is designed for locations where greater Btu output is desired than that given by standard baseboard units, such as beneath windows or in other drafty spots. It may be used also to replace a standard radiator in modernization jobs.

Tall baseboard convector is designed for adjustability and increased Btu output

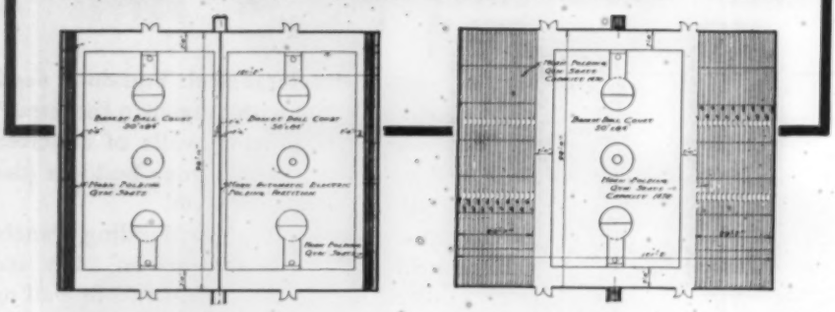
The unit is taller than regular radiant baseboard, and is said to create a "chimney effect" within itself to achieve increased convection. The heating coil consists of collared steel fins mechanically bonded on a steam pipe. The coil is hung on a bracket attached to the back plate. The pitch of the coil may be adjusted. The front plate is louvered and snapped into place. Units are made in standard lengths up to 10 ft, with 1, 1¼ or 2 in. steel pipe, or with 1 or 1¼ in. copper pipe. Kritzer Radiant Coils, Inc., 2901 W. Lawrence Ave., Chicago 25, Ill.

Safety Device for Self-Controlled Elevators

The Atlantic Refining Company's new building in Dallas, Texas, is equipped with a bank of intensive-service elevators arranged for operation by passengers. When signal buttons are pressed, the first available car will stop at the landing and level itself as the doors open

(*Continued on page 264*)

UTILIZE YOUR GYM SPACE WITH HORN

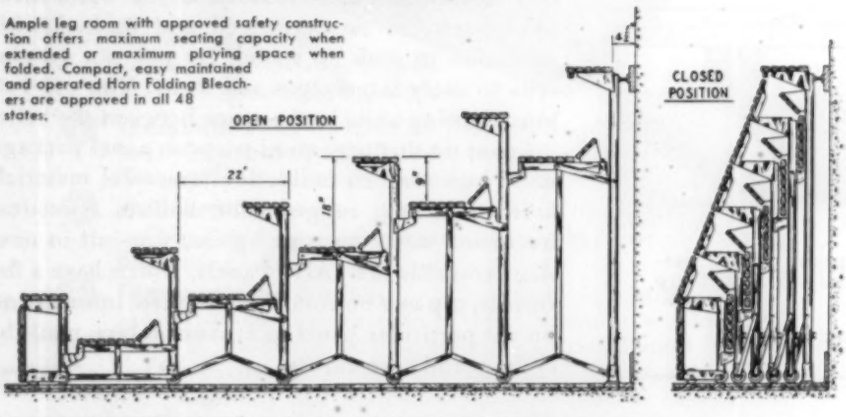


Two regulation basketball courts separated by a Horn Automatic Electric Folding Partition. Horn Folding Bleachers in folded position.

HORN FOLDING BLEACHERS extended increases the seating capacity for the BIG GAME! Horn Folding Bleachers will meet your requirements.

HORN FOLDING BLEACHERS

Ample leg room with approved safety construction offers maximum seating capacity when extended or maximum playing space when folded. Compact, easy maintained and operated Horn Folding Bleachers are approved in all 48 states.



ROWS	FLOOR SPACE IN USE	FLOOR SPACE *CLOSED	**HEIGHT	ROWS	FLOOR SPACE IN USE	FLOOR SPACE *CLOSED	**HEIGHT
3	4′ 9″	1′ 8¾″	3′ 0″	12	21′ 3″	4′ 3⅛″	9′ 9″
4	6′ 7″	2′ 0½″	3′ 9″	13	23′ 1″	4′ 6½″	10′ 6″
5	8′ 5″	2′ 3½″	4′ 6″	14	24′ 11″	4′ 9⅞″	11″ 3″
6	10′ 3″	2′ 6⅛″	5′ 3″	15	26′ 9″	5′ 1¼″	12′ 0″
7	12′ 1″	2′ 10¼″	6′ 0″	16	28′ 7″	5′ 4⅝″	12′ 9″
8	13′ 11″	3′ 1⅝″	6′ 9″	17	30′ 5″	5′ 8″	13′ 6″
9	15′ 9″	3′ 5″	7′ 6″	18	32′ 3″	5′ 11⅜″	14′ 3″
10	17′ 7″	3′ 8⅝″	8′ 3″	19	34′ 1″	6′ 2¾″	15′ 0″
11	19′ 5″	3′ 11¾″	9′ 0″	20	35′ 11″	6′ 6⅛″	15′ 9″

SINCE Horn 1909

*Dimension includes 4½ in. space between top seat and wall.
**Height in open position same as closed. For Bleachers higher than 20 Rows write for complete details and dimensions.

HORN BROTHERS COMPANY
DIVISION OF HORN INDUSTRIES FORT DODGE, IOWA, U.S.A.

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Just off Press!

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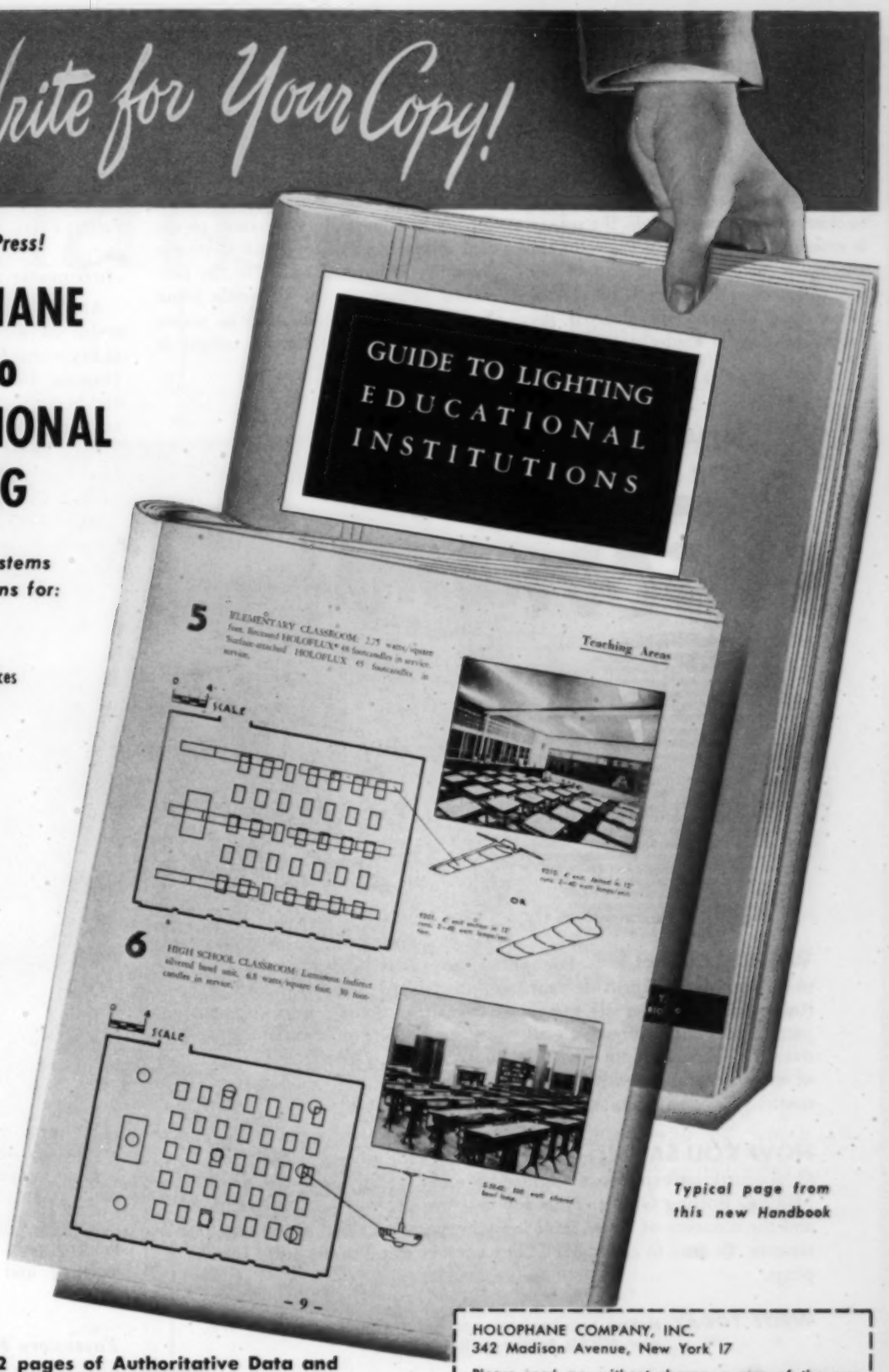
Light Control Systems and Specifications for:

- Study Halls
- Kindergartens
- Administrative Offices
- Classrooms
- Work Shops
- Chapels
- Swimming Pools
- Laboratories
- Medical Rooms
- Auditoriums
- Corridors
- Gymnasiums
- Cafeterias
- Blackboards
- Stair Areas
- Dining Rooms
- Outdoor Areas
- Kitchens
- Storage Space
- Laundries
- Rest Rooms
- Libraries
- Music Rooms
- Library Stacks
- Art Rooms
- Theaters
- Drafting Rooms



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Name_____

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Address_____

City_____ Zone____ State____

PRODUCTS
(*Continued from page 262*)

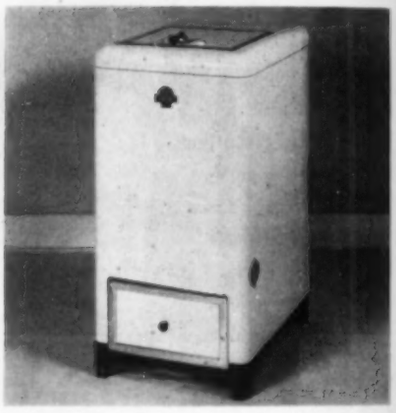
for a pre-set time interval. The doors then close automatically and the elevator will resume its trip. As the doors start to close, a soft buzzer sounds. If a person is crossing the threshold as the doors are closing, a special electronic safety device will re-open the doors. If the closing of car doors is appreciably delayed, the buzzer will emit a louder warning, and a light signal in the lobby control panel will notify the supervisor of the slowdown in service of that car. Otis Elevator Co., 670 Fifth Ave., New York, N. Y.

Small Size Humidifier

The *Daffin Humidifier, Model 500*, is a table model type especially designed for use in homes, storage rooms, plants and other places where a lack of proper humidity is harmful either to the personnel present or the materials being handled. The unit measures 9 in. across and is 5 in. high. Positive output is 2½ lb of water per hour. The device contains an automatic float valve, and may be adapted for automatic control with a humidistat. This all-purpose humidifier is claimed to be economical to operate and easily installed. The capacitor motor is fully guaranteed for one year. Daffin Manufacturing Co., Dept H-10, Lancaster, Penn.

Automatic Disposal Unit

Among the new items of equipment styled for installation in kitchens and utility rooms is the *Calcinator Automatic Disposal Unit* which reduces garbage and burnable trash to a fine ash by dehydration and ignition. Operation is said to be odorless, cool, safe and efficient. Gas or electric models are available, finished in white enamel or gray "Krinkle-Koat." The unit incorporates a self-leveling, four point suspension base, and a built-in automatic draft and stack temperature control. The dehydrating burner assembly is said to be easily accessible for servicing. Gas models have an adjustable "Hi-Lo" burner for varying loads, and a visual inspection and lighting port. Calcinator Div., Valley Welding and Boiler Co., Bay City, Mich.



Disposal unit designed for kitchens or utility rooms, burns trash to a fine ash

Fasteners For Insulation and Acoustical Tile

A new series of formed-wire clips for the installation of acoustical tile and duct insulation materials, called *Quick-Clips*, is designed for application without tools. The clip for installing acoustical tile has one end bent at a 90 deg angle to fit over furring strips or plasterer's

(*Continued on page 266*)

NEW MECCO ROLLING GRILLES FOR ENDURING PROTECTION AND

Economy

WHERE TO SPECIFY. For applications where plans call for areas to be restricted yet provide ventilation, light and visibility, MECCO Rolling Grilles meet all specifications. They provide a handsome pattern in sturdy protective grill work that will be more economical over the years. Equipped with manual, chain and gear, hand crank or motor operation with built-in cylinder lock or padlock construction.

HOW YOU SAVE. Only the MECCO brand gives you the years of doormaking experience engineered into these specially designed MECCO Rolling Grilles. Thus you save because you get top quality and the economy of dependable long lasting service and lower maintenance. Be sure to check MECCO wherever metal doors enter your plans.

WRITE TODAY *stating requirements and get complete details of the new MECCO Rolling Grilles.*

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ALL TYPES ROLLING DOORS
ROLLING GRILLES
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KALAMEIN FIRE DOORS
TIN IRON CLAD DOORS

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permanent beauty
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The attraction which Marble exerts on alert architects and economy-minded owners is two-fold: first, Marble retains its lustrous beauty year after year with only a minimum of attention and care; second, Marble, because it is permanent, and because it is so easy to maintain, is among the most economical of all construction and decorative materials.

When good design demands significant beauty, or when careful planning requires stern economy, insist on Marble. It is the one material for which there is no substitute.

Literature available:
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108 FORSTER AVENUE, MOUNT VERNON, NEW YORK

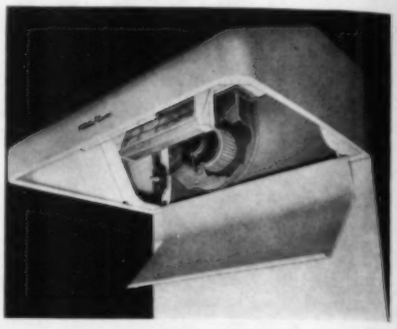
PRODUCTS
(*Continued from page 264*)

channels. The other end is formed into an oval loop, which is pressed into the edge of the tile being applied. Half of each loop is imbedded horizontally into each adjoining tile. A slightly different clip is designed for use with larger sheets of acoustical board.

The clip for installing insulation material around duct work is designed with loops to be impaled in adjoining side pieces of the insulation board, eliminating any metal to metal contact. Nelson Stud Welding Div., Morton Gregory Corp., Lorain, Ohio.

Range Ventilator Hood

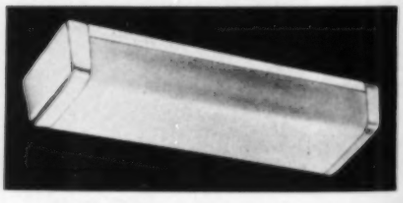
Kitchen Kanopy is a two-speed, over-the-range ventilator hood, equipped with a double aluminum foil filter. Two push buttons open a dropleaf to expose the filter and working parts for cleaning and servicing. The filters can be lifted out and washed under a hot water faucet. A back panel extends well below the cooking surface to give additional wall protection. The unit is finished in white baked enamel, and is built in three standard sizes: 40, 44 and 48 in. wide, 30 in. deep. Larger sizes may be ordered. Comfort Products Corp., Dallas, Tex.



Range ventilator hood features dropleaf panel for easy servicing and cleaning

Lighting Fixture

The *Sightron* fluorescent fixture, designed for flush ceiling mounting, utilizes a specially ribbed Plexiglas shield held by triple-plated ends. The ends slide out to permit the shield to swing down from one side for re-lamping or replacement of parts. The plastic shield is said to diffuse light evenly over a wide area from the bottom and sides of the fixture. It is claimed not to warp, chip or discolor.



Ceiling fixture features simple design and hinged ribbed plastic cover

The fixture has been selected by the Museum of Modern Art for its "Good Design" show in the Chicago Merchandise Mart. It is available in three sizes to hold two 20, 25 or 40 watt fluorescent lamps. Lightolier, Inc., 346 Claremont Ave., Jersey City, N. J.

(*Continued on page 268*)

HERE'S AID TO ARCHITECTS and ENGINEERS in planning SOUND SYSTEMS!

ARCHITECTS and their engineers are invited to make full use of the experience of RCA Sound System engineers and the great RCA research and engineering laboratories, in planning and engineering sound systems.

You can get practical help on sound systems for every type of building: Schools . . . Hospitals . . . Hotels . . . Factories and Offices . . . Churches . . . Department Stores . . . Airports and Terminals . . . Warehouses and Garages . . . Auditoriums . . . Recreational Centers . . . Institutions . . . Stadiums.

• • •

Call on RCA Sound System engineers while your plans are still in formative stage. *No obligation, of course.*

SOUND PRODUCTS 3-J
RADIO CORPORATION of AMERICA
ENGINEERING PRODUCTS DEPARTMENT, CAMDEN, N.J.

Please have one of your sound system engineers call on us.

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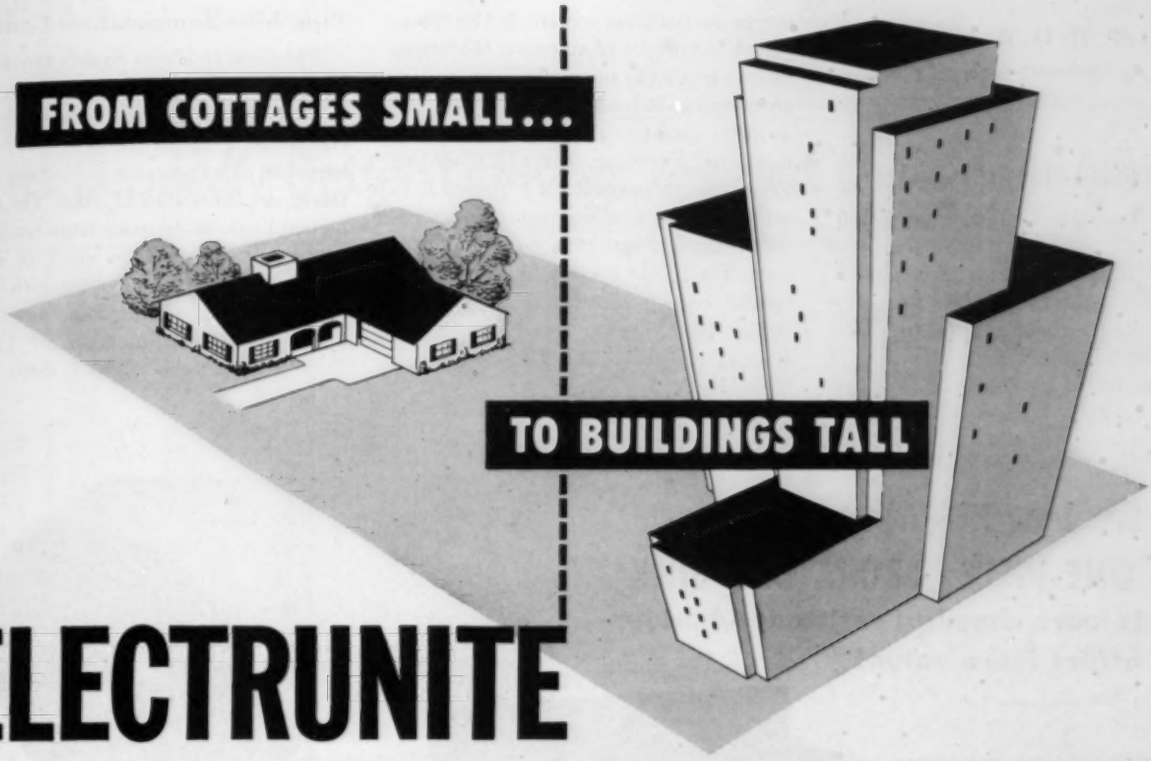

ELECTRUNITE E.M.T. Makes Wiring Jobs Easier

Bungalow or skyscraper—the wiring job that includes raceways of easy working Republic ELECTRUNITE E.M.T. *keeps pace* with the building schedule. No wonder that so many contractors and architects prefer this lightweight rigid steel wiring raceway.

Here are other good reasons why it pays to use this *modern* raceway:

- ***Unbroken corrosion resistance***—with *threadless* ELECTRUNITE E.M.T. the zinc coating remains undamaged by thread cuts. Galvanized, vibration-proof compression fittings complete the protection with strong, seepage-proof joints.
- ***Safety approved***—by the National Electric Code and most local codes for exposed, concealed and concrete slab construction... also gives the protection of a grounding circuit.
- ***Low cost***—the saving with ELECTRUNITE E.M.T. *buys more* outlets for the same wiring dollars.
- ***Forms readily into bends, offsets, stubs***—makes installation an easier, better job in hard-to-get-at places.
- ***Easy to install***—and easy to move in case of last minute change.

Why not contact your nearest Steel and Tubes Representative today, or write us for the complete story about ELECTRUNITE E.M.T.

SEE SWEET'S FILE

or write us for detailed information on these Republic Steel Building Products:

Pipe—Sheets—Roofing
Enduro Stainless Steel
Toncan Enameling Iron
Electrunite E.M.T.
Fretz-Moon Rigid Steel Conduit
Taylor Roofing Ternes
Berger Lockers, Bins, Shelving
Berger Cabinets for Kitchens
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STEEL & TUBES DIVISION • CLEVELAND 8, OHIO
Export Department: Chrysler Building, New York 17, New York

Republic REPUBLIC STEEL
ELECTRUNITE E.M.T.

LIGHTWEIGHT THREADLESS RIGID STEEL RACEWAY

PRODUCTS
(Continued from page 266)

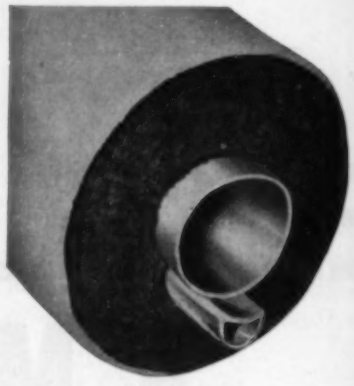
Plastic Covered Wall Panels

A new washable wall covering, called *Wonderwall*, consists of 12-in. square blocks of insulating board, covered with Velon plastic sheeting. Edges are beveled and tongued and grooved to facilitate fitting in place.

The material insulates as well as serves as finishing material. The fiberboard backing is of standard thickness, and is available in regular and waterproof types. It is also said to have some acoustic quality. The plastic covering, made by Firestone, has a leather-like finish, and is available in 9 colors. It is said to be easy to clean, stainproof, abrasion resistant, and cannot be dented or torn. The blocks may be applied with a special cement directly over concrete, cinder block, brick, wood or plaster. Page Panel Co., 261 Railroad Ave., Cresskill, N. J.

Pipe Line Temperature Control

The *Cond-O-Therm System* provides a pre-formed, extruded companion line for heating or cooling pipe lines carrying chemicals, paraffin, fruit juices, milk, beer, etc. The systems, including insulation, are fabricated to order. The companion lines can be made from tubing of copper, monel, stainless steel, or other metals. They may be used with such heating or cooling mediums as steam, hot water, brine, ammonia or Freon. Each length of the tubing is made with an extruded neck to slip over the end of the next length, allowing soldering or brazing of the joints in assembly. The main lines can be of welded, sweated or flanged construction. The amount of surface-area contact of the tubing with the parent line is said to allow temperatures to be pre-calculated accurately. Cond-O-Therm, 18 Littleton Ave., Newark, N. J.



Extruded pipe controls temperature of supply lines. Insulation covers both pipes

Hollow-Core Floor Slab Heating System

The hollow centers of *Flexicore* cast concrete building slabs were used as ducts for a split system of warm-air radiant panel heating in the Church of St. Columba in St. Paul, Minn. Architect Barry Byrne devised a system which sends warm air through the floor, making it a radiant panel, then passes it into the room through a baseboard grill. Air is carried back to the furnace through a central return grill.

Many advantages are claimed for such a system: air temperature is raised quickly, overcoming the effect of thermal lag in the floor; the floor need only

(Continued on page 270)

See how KEWAUNEE'S
NEW ONE-PIECE LABORATORY SINK
is more chemical resistant—huskier—
offers more value!

Here's real news from Kewaunee—a *major* improvement in laboratory sink construction! It is a strong, one-piece sink made of Kewaunee's new Kemtherm.

NOTE THESE OUTSTANDING ADVANTAGES

- Body is acid-proof, low expansion ceramic, molded in one piece. No joints or seams.
- Wall thickness assures maximum structural strength needed in normal service.
- Entire sink is impregnated with Kewaunee's own chemical- and heat-resistant resin which provides a good-looking, uniform, ebony-black surface.
- Guaranteed to withstand maximum thermal shock encountered in normal laboratory service.
- Body is extremely resistant to attack by all chemicals other than hydrofluoric acid.
- Finish is impervious to solvents . . . highly resistant to bases and salts, and acids at room temperatures.
- Available now at Kewaunee's attractive production-line prices.

Want more information on this husky, one-piece chemical resistor? Write for free folder describing the new Kemtherm Laboratory Sink in 15 different models. No obligation.

Representatives and Sales Offices in Principal Cities
Manufacturers of Wood and Metal Laboratory Equipment

Kewaunee Mfg. Co.
C. G. Campbell, President
5046 South Center Street • Adrian, Michigan

It's Decidedly Better Lighting...without the ginger bread!

Dallas' new Employer's Insurance Building, opened July 10. Architect — George Dahl

Tricky ornaments won't beautify a lighting fixture. Architects look, first, for *simplicity* — functional design that affords maximum light, attracts least attention.

That's why 4,891 Day-Brite parabolic troffers were chosen for Dallas' new $3,700,000 Employer's Insurance Building — one of the most modern structures in the Southwest.

Architects know that Day-Brite fixtures impart an atmosphere of elegance and discrimination . . . are easily installed and maintained . . . made to give years of low-cost, trouble-free service.

If *you're* looking for quality lighting, without the 'gingerbread,' look to Day-Brite. There's a Day-Brite answer to every lighting problem. And, the price is right.

Day-Brite recessed troffers for

FUNCTIONAL DESIGN . . .

Clean, simple lines, appropriate to any setting. No "dated" ornamentation

SOUND CONSTRUCTION . . .

All fixtures Underwriters Approved, stress-engineered for durability

EASY INSTALLATION . . .

A one man, 60-second operation. No holes to drill, no bolts

LOW-COST MAINTENANCE . . .

Designed for fast, easy cleaning, relamping, starter replacement

LONG-SERVICE . . .

Famous Day-Brite quality *guarantees* years of faultless performance

DIVERSIFIED LINE . . .

Six basic groups to choose from. An easy answer to every lighting problem

DISTRIBUTED NATIONALLY BY LEADING ELECTRICAL WHOLESALERS

Day-Brite Lighting, Inc., 5465 Bulwer Ave., St. Louis 7, Mo.
In Canada: Amalgamated Electric Corp., Ltd., Toronto 6, Ontario

"DECIDEDLY BETTER"
DAY-BRITE
Lighting Fixtures

039

Premium Quality without Premium Cost

PRODUCTS
(Continued from page 268)

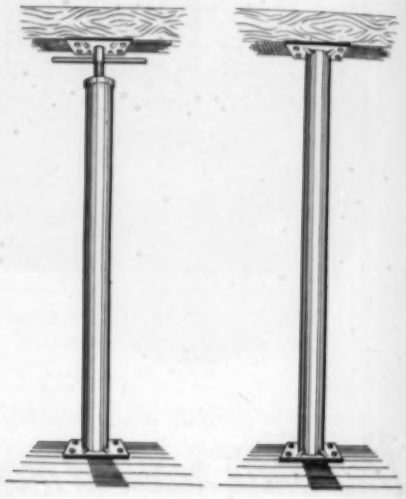
be warm, not hot; air does not stagnate in the room; and air entering on outside walls warms window areas. The concrete building slabs are hollow cast in 6 by 12 in. cross section, and in inch variations of length up to 22 ft 6 in. The Flexicore Co., Inc., P.O. Box 825, Dayton 1, Ohio.

Embossed Plywood

Combwood, a low-cost plywood, has a combed grain pattern of evenly spaced parallel lines. Ridge tops are flat, with rounded off edges to resist splintering and denting, and for easy cleaning. The design is heat-embossed, leaving the wood grain visible. The heat treatment is claimed to give a hard surface requiring less lacquer in finishing. The material is designed for use as wall paneling, ceilings, doors, cabinets, etc. It is available in ¼ in., 3-ply interior or exterior grade plywood, with solid core and back. Panel sizes are 4 by 7 ft and 4 by 8 ft. Aetna Plywood & Veneer Co., 1750 N. Elston Ave., Dept. K, Chicago 22, Ill.

Prefabricated Columns

The *Shoubson Perma-Post* is a prefabricated 4-in. OD anti-corrosive metal column made from electric-welded steel and coated with vinyl plastic. The columns are said to be low-cost and sturdy. They need no painting and may be bolted into wood, steel or concrete.



Plastic-covered columns are fabricated for either temporary or permanent supports

Two types of posts are available. One is of fixed length, available in standard sizes of 6½, 7, 7½ and 8 ft, or in any exact size under 9 ft. The other is an adjustable jack-type model which may be used as a temporary support or as a permanent column by a locking installation. These are available in lengths from 9 in. to 9 ft 7 in. John Shoub & Son, 711 Jacksonia St., Pittsburgh 2, Penn.

Plastic Fabric

Viorlex Madagaska is a new plastic upholstery fabric which has the appearance of straw. The material is composed of vinyl plastic fused with a fabric. It is said to be tough enough to top a table, and to be washable, stainproof and impervious to alcohol. It is also said to be pliable enough to upholster furniture without cracking or flaking. The manufacturers suggest the material for such other uses as lamps, screens, etc. L. E. Carpenter & Co., Inc., Wharton, N. J.

(Continued on page 272)

Used with the Rixson Uni-Check, the Multi-Point Door Holder No. 37 offers an unsurpassed installation for doors which require several points of hold-open. Upon quick release by a slight manual opening of the door, it returns to closed position under control of the hydraulic checking device. Almost any number of positive hold-open points desired may be furnished.

Special problems of installation will receive prompt attention from the Rixson engineering and designing departments.

The OSCAR C. RIXSON COMPANY
4450 Carroll Avenue, Chicago 24, Illinois — *Established 1900* — Telephone MAnsfield 6-5050

SALES REPRESENTATIVES

ATLANTA—Walter S. Johnson, 917 St. Charles Ave., Tel. Vernon 4725.
CANADA—The Richards-Wilcox Canadian Co., Ltd., London, Ont., Tel. Fairmont 2800.
LOS ANGELES—George E. Tupper, 1010 W. Olympic Blvd., Tel. Prospect 0924.
NEW YORK—Fred G. MacKenzie, 107 Reade St., Tel. Barclay 7-6852.
PHILADELPHIA—G. Norris Williams, 211 Greenwood Ave., Wyncote, Pa., Tel. Ogontz 1929.
SEATTLE—S. G. Kirkland, 845 Bellevue Ave., North, Tel. EAst 8855.
WASHINGTON, D. C.—L. R. Anderson, 4318 Rosedale Ave., Bethesda, Md., Tel. Oliver 4873.

What's Your HEATING PROBLEM?

Young "SH" Unit Heater

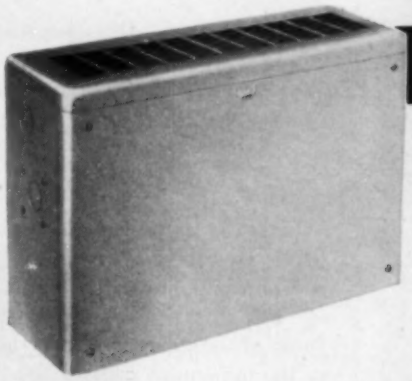
COLD SPOTS?

A favorite for general space heating and eliminating "cold spots" in large areas is the Young Type "SH" horizontal discharge unit heater. These non-ferrous-core units deliver maximum heat transfer . . . use quiet and efficient fans. Available in 14 sizes, with capacities ranging from 19,000 to 325,000 Btu per hour.

Young "Vertiflow" Unit Heater

EXTRA HIGH CEILINGS?

Patented "Vertiflow" design offers a rugged, compact, highly efficient unit with low hp requirement. Its exclusive motor "ventilation" feature eliminates burn-outs from core heat. Seven sizes range from 52,600 to 552,000 Btu per hour, and cover larger areas quicker, with fewer units. Diffusers, nozzles, and Anemostats provide any heat pattern desired.



Young Cabinet Unit Heater

DRAFTY AREAS?

Here's the ideal heating unit for lobbies, vestibules, auditoriums, etc. . . . wherever concentrated heating capacities are required and a compact, attractive exterior design is necessary. They are available in 3 sizes of each of 3 styles offering heating capacities ranging from 26,200 to 115,000 Btu per hour.

YOUNG

Heat Transfer Products for Automotive and Industrial Applications.

Young Quality

Reg. U. S. Pat. Off.

Heating, Cooling, Air Conditioning Products for Home and Industry.

YOUNG RADIATOR COMPANY

Dept. 610-K, RACINE, WISCONSIN

Plants at Racine, Wisconsin and Mattoon, Illinois
Sales and Engineering Offices in All Principal Cities

THIS COUPON BRINGS FULL DETAILS ON THREE SOLUTIONS TO HEATING DIFFICULTIES

YOUNG RADIATOR CO.
DEPT. 610-K,
RACINE, WIS.

Rush me information on the following Young Unit Heaters:

☐ "SH" ☐ "Vertiflow" ☐ Cabinet

Name_____

Company_____

Address_____

City_____ Zone____ State_____

PRODUCTS
(Continued from page 270)

Gymnasium Floor Finish

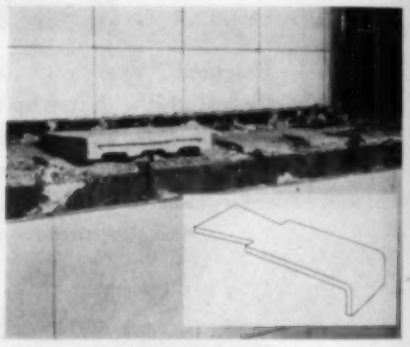
Lino-Plastics is an abrasion-resistant floor finish designed for gymnasiums, handball courts and other recreational rooms. The finish is transparent and does not change the color of the floor. Several coats are applied by lambswool applicators or brushes; each is said to dry quickly. The coating is claimed to penetrate the wood, and not to chip, blister, peel or to be soiled by spilled liquids or rubber burns. Yearly upkeep is said to be confined to spotting in hard-used traffic areas. Plastic Products, Ottawa, Ohio.

Refrigerated Self-Server For Food Stores

The *Frigidaire Zero Self-Server* is a low temperature cabinet with a rolling glass top, designed for the sale of frozen foods, ice cream and frozen juices in food stores. The glass top is constructed of triple panes of glass, and has stainless steel frames which ride on recessed tracks. The unit provides 11.2 cu ft of storage space. Aluminum thermal dividers may be used to divide the interior into four sections if required. The cabinet is all steel, with a stainless steel top and recessed base. A sealed rotary compressor supplies the refrigeration. Finish is white enamel. Frigidaire Div., General Motors Corp., Dayton 1, Ohio.

Clips For Ceramic Tile

Clips made of galvanized wrought iron are used to hold ceramic tile in place in the new Battery Park Underpass at New York City. Wrought iron was chosen as a material for its ease in fabrication and corrosion resistance. The clips are made of 1-in. strip, $\frac{1}{8}$ in. thick. They are dovetail shape at one end, and bent at a 90 deg angle at the other.



Wrought iron clips (detail at right) fasten ceramic tiles securely in place

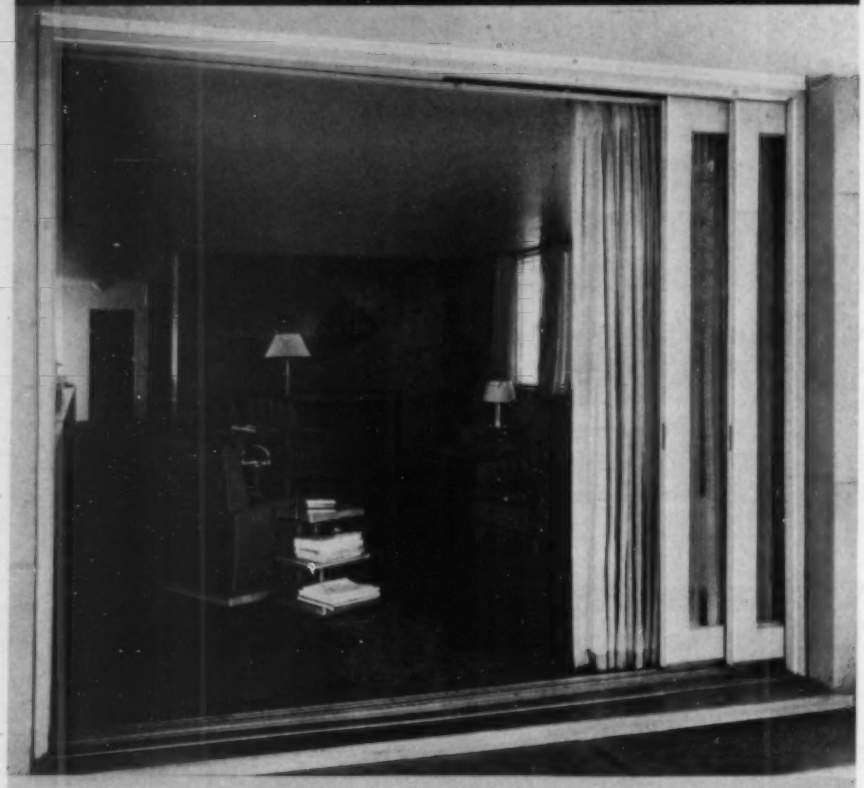
Each tile is grooved on two opposite edges. In setting the tiles, the dovetail end of a clip is inserted into a channel set into the concrete wall; the bent flange of the clip is fitted into the groove in the uppermost edge of the tile, and cement is applied to make a permanent installation. The method is said to require less time and to make the lining up of the tiles easier. National Radio Laboratories, Inc., Paramus, N. J.

Plastic Fillers

Phenolic Plastic Cloth and *Phenolic Plastic Metal*, designed for maintenance repairs, are said to dry quickly to a permanent bond with steel, aluminum, wood, glass and fabrics. It is used to repair dents, cracks, leaks, etc., and

(Continued on page 274)

WEATHER STRIPS FOR SLIDING DOORS



PROPERTY OWNERS WANT
SLIDING DOORS

"Accurate" patented Metal Weather Stripping for sliding doors definitely answers every requirement. All over America, "Accurate" Sliding Door Weather Stripping is the recognized material to do this job *right*.

ACCURATE

Write us for working drawings to fit your immediate needs. Or, if you prefer,

ASK FOR ILLUSTRATED FOLDER

ACCURATE METAL WEATHER STRIP CO., Inc.
215 EAST 26th STREET, NEW YORK 10, N. Y.

In the brand new Bon Marché Northgate store . . .
Bigelow's grand new carpet achievement . . .

CUSHIONLOK!

Recently the newest of The Bon Marché stores was opened at Northgate, outside Seattle . . . a new community called "the largest planned suburban shopping center in the world."

And for this forward-looking store, the carpet chosen was Bigelow's Cushionlok . . . the most revolutionary commercial carpet ever made.

Cushionlok is a sort of "double-decker special" . . . Bigelow's famous Gropoint weave with a sponge rubber base built in for resilience, durability, and ease of laying. In fact, it can be cemented right to bare concrete floors! It can be laid unusually quickly, seamed or patched well-nigh invisibly, and wears like the rock of Gibraltar!

It may well be that Cushionlok is the answer to *your* carpet installation problems.

For sound advice on any kind of carpet installation, you can't do better than to rely on Bigelow's Carpet Counsel. This board of experts will advise on color, grade, pattern, and price. There is no charge to you. Just write to Bigelow Carpet Counsel, at the address below. Your inquiry will be given prompt attention.

BIGELOW Rugs and Carpets

140 Madison Ave., N.Y. C.

Beauty you can see . . . quality you can trust . . . since 1825

PRODUCTS
(*Continued from page 272*)

can be filed, ground or sanded for taking a paint or lacquer finish. The material is said to be elastic, waterproof, heat resisting, and not to check, crack, peel or shrink. Special solvents permit application of the materials with a putty knife, brush or sprayer. The Pioneer Chemical & Manufacturing Co., 1828 Columbus Rd., Cleveland, Ohio.

Felt Point Pen

A new fountain pen, the *Felt-Point Pen* is said to combine the features of pencil, brush or crayon for marking, writing or drawing on any surface. The instrument is said to mark on paper, wood, cartons, metal, glass, cellophane and other surfaces, hot or cold, wet or dry. The barrel, nose and valve parts of the pen are made of aluminum. The cap is plated brass. Points are made of chemically treated white felt. Interchangeable points come in three sizes for marking fine, medium or broad lines. Ink is fed by automatic valve control to the point. The ink is available in black or colors, and comes in cans with a nozzle designed for easy filling. The instrument is the same size as a fountain pen. Marsh Stencil Machine Co., Belleville, Ill.

Mortar Gun

The *Vita Mortar Gun* was designed to save time and waste in spreading mortar for the laying of cement blocks, cinder blocks and hollow tile. The electrically operated device simplifies spreading the mortar on the thin walls of the blocks, and is also used to fill in vertical joints while blocks are in place. The tool operates on 110 volts ac or dc. The manufacturers claim that three times as many building blocks can be laid in one day with the mortar gun as can be laid by the conventional hand trowel method. Vita Labor Saving Tools, Inc., Station Plaza, Smithtown Branch, N. Y.

Electric mortar gun spreads thin line of mortar for cement block installations

Wind Actuated Exhauster

The *Agitair Type CNO Wind Actuated Exhausters* employ outside breezes to set up an ejector action, which draws air up through the stack from the area being ventilated below. Low pressure areas on the leeward side are said to accelerate this ejector action. The units are claimed to perform efficiently at any wind velocity regardless of the direction of the wind. An arrangement of baffles is designed to eliminate back drafts.

The units are constructed of heavy gage steel, and have no moving parts. They may also be obtained in copper, aluminum, stainless steel or monel

(*Continued on page 276*)

AWARD-WINNING MICHIGAN STATE CAFETERIA

Van again busy for Michigan State College

- The best advertisement is a satisfied customer. Michigan State College liked Van's contribution to the kitchen and cafeteria in the Union Building. So, Van is fabricating the food service equipment for the W. K. Kellogg Continuing Education Center, East Lansing, Michigan, for which Lewis J. Sarvis, Battle Creek, is the architect.

- When you have projects involving food service equipment, new or modernization, Van will be glad to share its century of experience.

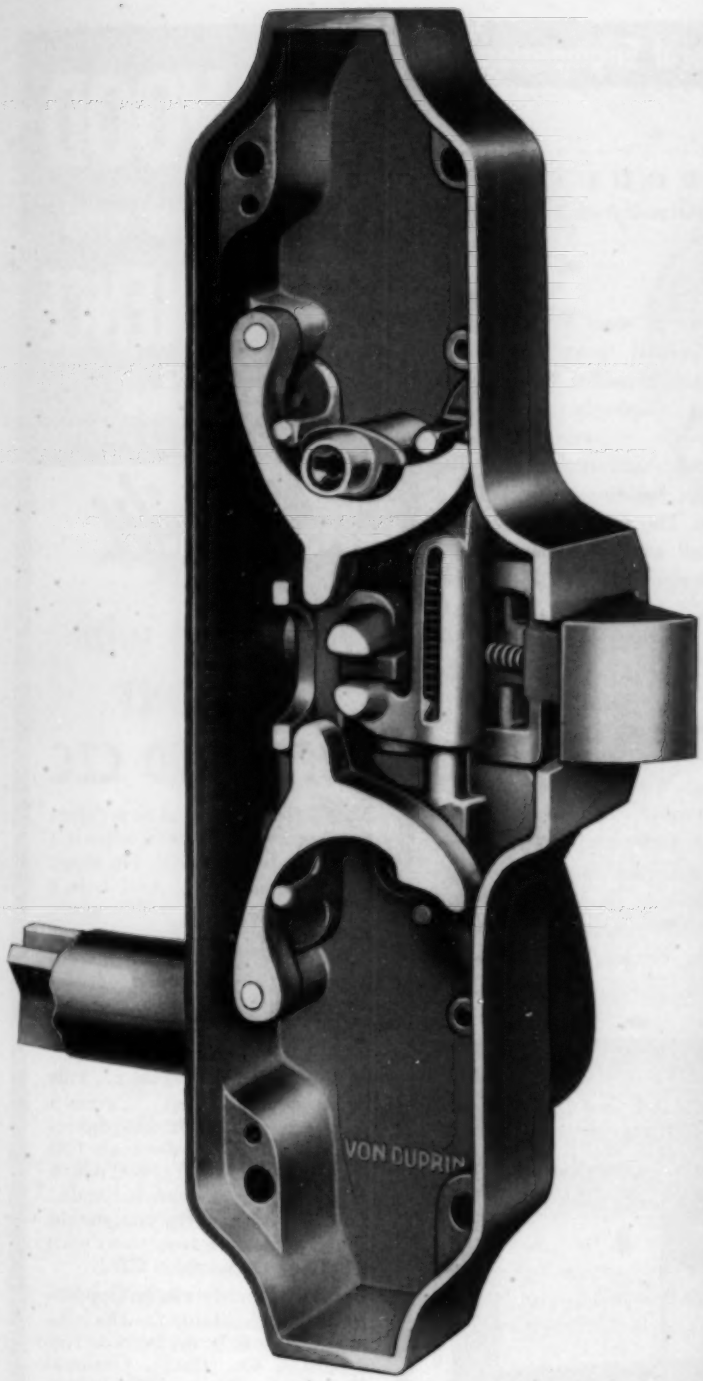
The John Van Range Co.

EQUIPMENT FOR THE PREPARATION AND SERVING OF FOOD

DIVISION OF THE EDWARDS MANUFACTURING CO.

Branches in Principal Cities

429 CULVERT STREET **CINCINNATI 2, OHIO**



Every part shown in this illustration of an A2 Von Duprin case is of drop-forged bronze except the two pins, the springs, the cross bar and its X-Bar reinforcement. The cross bar is of bronze tubing and the X-Bar of extruded bronze. Until science learns more about metals, there is no way to make a finer, tougher, more durable exit device.

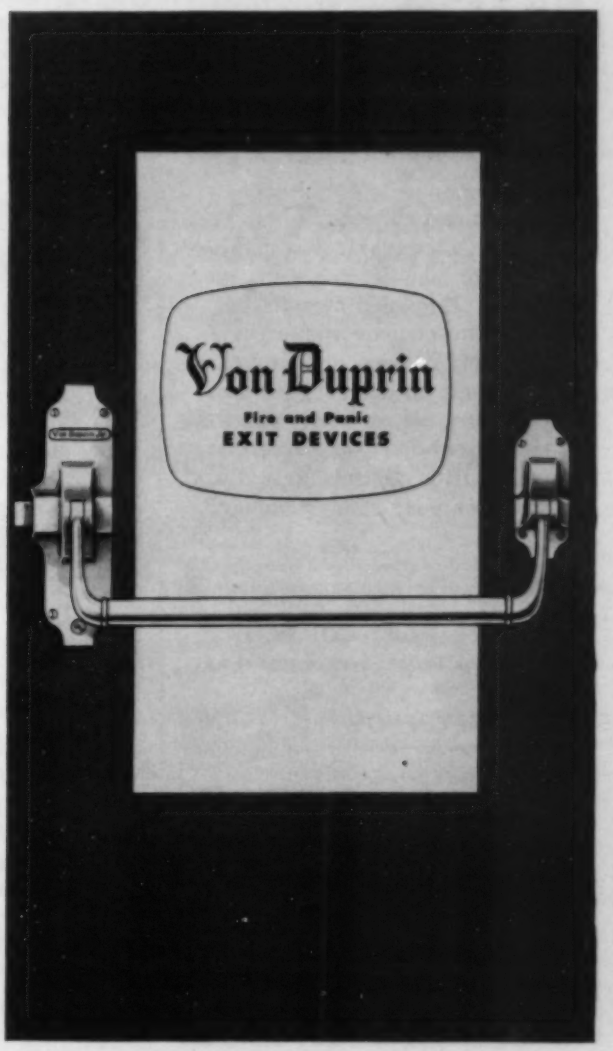
Von Duprin

Drop-Forged Parts Bring You TRIPLE BENEFITS!

☆ They bring you ease of mind. You know that the drop-forged parts are strong, tough, dense . . . husky as structural steel . . . and that their accurate fit assures many years of smooth, sure, positive operation.

☆ They also bring a long range economy impossible with less dense, less tough, less durable metals.

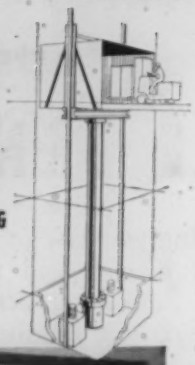
☆ They bring you, too, the lasting satisfaction of knowing that, even after scores of years of hard use, the devices will have abundant strength to meet the demands of any emergency.



VON DUPRIN DIVISION
VONNEGUT HARDWARE CO., INDIANAPOLIS 9, IND.

More real Value for Your clients

- ECONOMICAL TO INSTALL AND USE
- NO PENTHOUSE REQUIRED
- NO LOAD BEARING WALLS REQUIRED
- ACCURATE LEVELING AT LANDINGS
- QUIET, SMOOTH OPERATION



GLOBE ENGINEERED EQUIPMENT

GLOBE OiLift ELEVATORS

Give your clients the extra cost-savings and efficiency of Globe OiLift Elevators. No penthouse or load-bearing walls required, simplified installation, minimum of maintenance, latest safety devices, quiet operation, built for long, rugged use. Oil-hydraulic, electric operation. Hold-down or automatic push-button controls. Actually, more for your client's money!

Mail Coupon Today for Catalog A1050 showing complete details on all industrial and passenger elevators. Estimates on request. No obligation.

GLOBE HOIST COMPANY

DES MOINES 6, IOWA PHILADELPHIA 18, PA.

MAIL COUPON NOW

GLOBE HOIST COMPANY
1000 E. Mermaid Lane
Philadelphia 18, Pa.

Please send Illustrated Catalog A1050 showing OiLift Elevators, Sidewalk Elevators, etc.

Name .....

Street .....

City ..... State .....

PRODUCTS

(Continued from page 274)

metal. Exhausters in sizes 9 to 48 in. are supplied knocked down with all parts and fasteners. Smaller, 5 to 8 in. sizes are shipped completely assembled. The manufacturers recommend the units for low cost ventilation of industrial plants, farm buildings, ships, flue caps and homes. The smallest size unit is 8 9/16 in. overall width, the largest is 80¼ in. Air Devices, Inc., 17 E. 42nd St., New York 17, N. Y.

Storage Units

Adaptations of a series of prize winning storage units from the Museum of Modern Art's International Low Cost Furniture Design are being mass produced for the market. The original designs by Clive Latimer and Robin Day were based on a British manufacturing process not available in this country. Extensive redesigning was done in collaboration with Edmond J. Spence.

Storage units feature sloping fronts, metal supports and inset drawer pulls

While some of the original character and versatility of the pieces has been lost in the process, the units do present a line of simply styled, useful storage chests. They are made in three and five drawer heights and varying widths. One unit is fitted as a desk. A single metal support can serve adjoining chests. Johnson-Carper Furniture Co., Roanoke 6, Va.

Where WOOD is indicated and PERMANENCE demanded

Specify

treatment with DU PONT COPPERIZED CZC

You'll think of wood as a *different* structural material after it's pressure-treated with Du Pont Copperized CZC. And here's why. Copperized CZC gives long-lasting protection against termites, fire and decay *without changing* the inherent structural characteristics of wood.

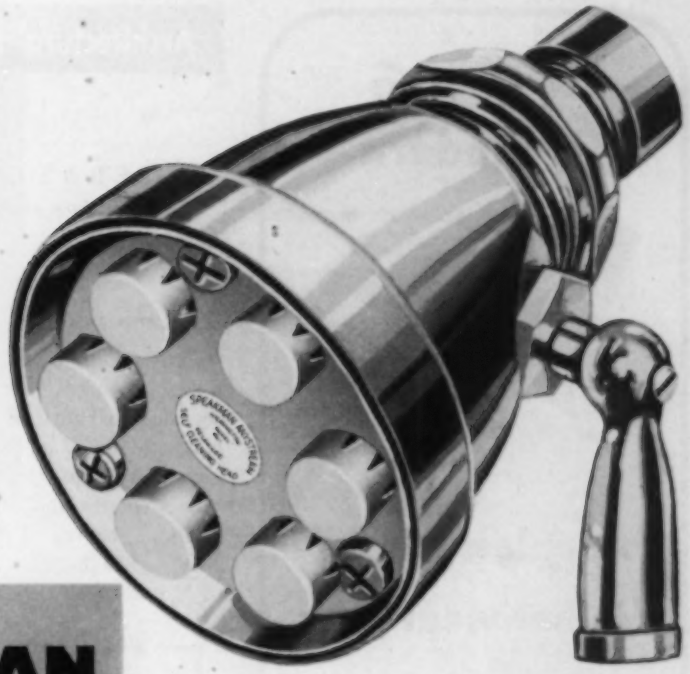
This salt-type wood preservative makes lumber and timber unpalatable to termites . . . kills decay-causing fungi . . . gives a high degree of fire retardance. Copperized CZC does all this while leaving wood clean, paintable, odorless and safe to handle. Sound reasons why you should specify pressure-treatment with Du Pont Copperized CZC.

Full technical details on Copperized CZC available for the asking. Write: E. I. du Pont de Nemours & Co. (Inc.), Grasselli Chemicals Dept., Wilmington 98, Delaware.

DU PONT

REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY



S-2250 (Model 1) SPEAKMAN ANYSTREAM Shower Head

. . . Handsomely designed for smart appearance . . . easily installed . . . used in finest hotels, clubs, schools, institutions and homes in America. Integral ball joint . . . concealed volume control. Can be equipped with Allen Set Screw to prevent vandalism. ½" I.P.S. female inlet.

like the SPEAKMAN ANYSTREAM SENTINEL!

a turn of the lever gives

NEEDLE SPRAY *for stimulation*

NORMAL SPRAY *for relaxation*

FLOOD SPRAY *for no-splash rinsing*

NEVER THIS! *Anystream is self-cleaning*

You'll find the ideal shower combination for schools, hotels, apartment houses, clubs, institutions and homes is the Speakman *Sentinel*—consisting of the famous Anystream Shower Head and the *Sentinel* Balanced Pressure Mixing Valve. It's the shower that meets with instant, all-round approval because it gives perfect bathing comfort, hot-water economy and remarkable ease of maintenance.

ANYSTREAM Shower Heads

Thousands of Anystream Self-Cleaning Shower Heads have already been installed in leading hotels. This water-saving shower head won't clog . . . has no pin-point holes . . . gives bathers a choice of showers—normal, needle, or flood. Durable and dependable, it makes possible as much as 50% lower water consumption, depending on pressure.

SENTINEL Balanced Pressure Mixing Valve

The Speakman *Sentinel* Balanced Pressure Mixing Valve holds shower temperatures steady *despite water pressure fluctuations.* The miraculous f-l-o-a-t-i-n-g piston in the valve works on water pressure alone. It prevents sudden surges of icy cold or steaming hot water that often causes injury. The piston is easily removed for servicing *without shutting down the water supply.*

Speakman Showers and Fixtures are distributed nationally through wholesale plumbing supply dealers and contractors. From *Si-Flo* Flush Valves—the valve that whispers—to Speakman Self-Closing Metering Lavatory Fixtures that cut water-waste, it pays to specify Speakman—traditionally the best in brass. It lasts a lifetime!

In Our Eighty-First Year

SPEAKMAN

SHOWERS AND FIXTURES

SPEAKMAN COMPANY, WILMINGTON, DELAWARE

See our CATALOG in SWEET'S FILE ARCHITECTURAL

See Sweet's Architectural File for condensed catalog or write directly.

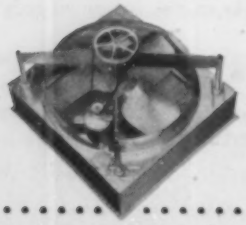
No home is modern

. . . unless it's cool in hot weather!

Hunter Package Fan gives cool comfort on hottest nights

Throughout the nation, home owners are finding that no modern convenience gives them as much comfort as a Hunter Attic Fan. It drives out stale, humid air and fills every room in the home with cool, invigorating breezes.

Installation of Hunter's new, compact Package Attic Fan is simple and inexpensive. Fan, motor, suction box and shutter furnished complete—requiring only a ceiling opening and less than 18" clearance in attic. Four models, ranging from 4750 CFM to 9500 CFM, to fit any home size and climate. Quiet, powerful, dependable. Manufactured by Hunter, exclusive fan makers for over 64 years.



Write for complete installation manual, "How to Cool for Comfort." Hunter Fan and Ventilating Co. 396 S. Front St., Memphis, Tenn.

Hunter

PACKAGE ATTIC FANS

Architectural Engineering

LITERATURE

(*Continued from page 186*)

Air Exhausters

New Agitair Type CNO Exhausters. Folder describes features of the wind actuated exhausters. The component parts and mounting bases are illustrated. Details indicate operation. Charts give standard sizes and capacities, and performance curves. Typical applications are noted. 6 pp., illus. Air Devices, Inc., 17 E. 42nd St., New York 17, N. Y.

Floor Finishing

American Floor Finishing and Maintenance Materials. Discusses floor finishes and the preparation and maintenance materials and equipment used. Notes are given on the selection of finishes for various types of flooring. A data chart shows drying time and coverage for the finishes. A final section gives detailed specifications on each of the materials discussed, along with directions for application and product information. 38 pp., illus. The American Floor Surfacing Machine Co., Toledo 3, Ohio.

Fans

(1) Backwardly Inclined Fans; (2) Forward Curved Fans; (3) Utility Fans. These booklets discuss the features and construction of the various type fans for use with heating, ventilating and air conditioning equipment. Many charts, tables and details give performance data, capacities, sizes and weights and other pertinent information on the fans. 82 pp., 78 pp., and 8 pp., illus. The Trane Co., La Crosse, Wis.*

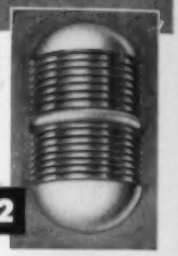
Kitchen Equipment

Exciting Adaptations! New Uses For Youngstown Kitchens Equipment. Booklet illustrates and describes uses of steel kitchen equipment for business and professional concerns, such as clinics, pharmacies, laboratories, dental offices, schools, workshops, etc. Also included are notes on the treatment of kitchen obstructions, recesses and corners, and the use of standard equipment for snack bars, desks, dressing tables and the like. 12 pp., illus. Mullins Manufacturing Corp., Warren, Ohio.*

(*Continued on page 282*)

Specialty Lights *by* **CANNON**

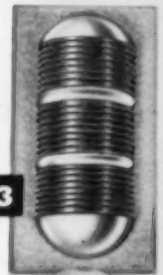
(Above) DNP-1 light used in residence, with face plate removed, showing construction of (2 gang) plaster ring box cover.



DNP-2

Low Voltage or 115V

Plastic prism lens in red, green, blue, amber and crystal—inside surface sandblasted.

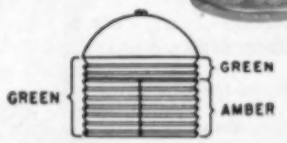


DNP-3

Face plate of Plaskon Stainless Steel or various Hammertone finishes.

DMP-1

Marine-type Pedestal light with "Pathfinder" head may be mounted on post, wall, ceiling, etc.



Construction of Pathfinder-head type prism lens combinations: 360°, 180°, or 3 prism 360° rings.

Write for a copy of the UPL-2 Specialty Lights Bulletin for complete information. Add PL-3 if interested in the Pathfinder type lights.

Write to Cannon Electric Development Company, Division of Cannon Manufacturing Corporation, 3209 Humboldt Street, Los Angeles 31, California or contact one of the 28 Cannon representatives located in principal U. S. A. cities. Canadian plant and offices: Toronto, Ontario. Export: Frazar & Hansen, San Francisco, California.

CANNON ELECTRIC

CAN YOU FIGURE THE INSTALLED COST OF Q-FLOOR?

The installed cost of Q-Floor is the quoted cost, less the savings which Q-Floor effects in construction time and in reducing the amount of other materials.

Before you say what Q-Floor costs, you should figure how much *sooner* your job will be *completed,* if Q-Floors are used . . . usually 15 to 20% sooner.

Time saved by Q-Floors saves financing; reduces construction costs; brings earlier revenue. Lightweight Q-Floor construction saves materials in foundation and frame.

Less easy to deduct from final cost (but just as real), are savings by subcontractors using Q-Floor as a working platform and storage space; savings in your drafting room because of fewer revision drawings, since you need no preset inserts and because electrical outlets and partitions can be located after tenants move in.

In addition to these cash savings, Q-Floors protect a building against electrical obsolescence . . . an outlet can be established in a matter of minutes *on any six-inch area of exposed floor without digging trenches.* Tenants are spared the usual enormous electrical alteration bill. This is an inducement to prospective tenants that gives Q-Floor buildings a competitive edge in the rental market.

The quoted, per-foot-cost of Q-Floor is less than the cost of carpet to cover it. But the final cost, with all factors considered, comes out even lower. That's what clients buy.

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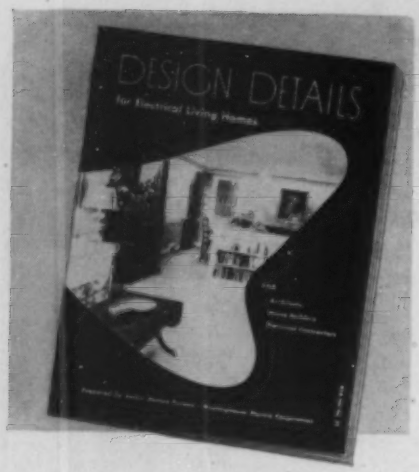
Waterman Building
Mobile, Alabama
Architect: Platt Roberts & Associates *Contractor:* J. P. Ewin, Inc.

Left: Architect Platt Roberts and his Associates, O. W. Long, Jr. and A. B. Benson

WRITE FOR LATEST Q-FLOOR LITERATURE



A New Book for Architects

The increasing use of electricity throughout the home emphasizes the importance of electrical planning.

To help with your planning, those electrical features that have won wide public approval have been incorporated in this "Design Details" book.

It fills a real need for construction details on valance, cornice, cove, soffit, pinhole spot, undercabinet and other unusual lighting effects. Kitchen and laundry plans are also shown, as well as essentials of modern wiring. Photographs of actual installations illustrate these planning ideas. Architectural details are accurate and complete.

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Architectural Engineering

LITERATURE

(*Continued from page 280*)

Solar Houses

Solar Designs For Comfortable Living. Booklet describes twenty-four houses designed by L. S. Emmert & Assocs., Architects and Engineers. Plans and an elevation are given for each house. Sizes range from 850 to 2550 sq ft. Each design incorporates Solar Air-Flo window units. Descriptions and details are included for the windows. 32 pp., illus. Price $1.00. Solar Air-Flo, Inc., Elkhart, Ind.

Electrical Equipment For Homes

Sales Features For Electrical Living Homes (Booklet B-4691). Suggests a number of "electrical packages" for houses in various sizes, types and price brackets. Equipment for kitchens, laundrys, bathrooms, bedrooms, dining and living rooms, garages and exterior lights is included. Plans, details and wiring layouts are given, along with many photographs. 31 pp., illus. Westinghouse Electric Corp., Box 2099, Pittsburgh 30, Penn.*

Generating Plants

Katolight AC-DC Generating Plants. Folder illustrates and describes a variety of models of generating plants for homes, farms and institutions. Each is covered with notes on use, specifications, standard equipment and accessories. Tables give dimension and performance data. 6 pp., illus. Kato Engineering Co., Mankato, Minn.

Floor Maintenance

Make Yours a Beautiful Floor Picture. Brochure describes features and uses of Multi-Clean Floor Wax for maintaining various types of floors. Maintenance machines are discussed also. 8 pp., illus.

A series of folders also are available on the installation and maintenance of the following types of floors: asphalt tile; rubber tile; linoleum; terrazzo; wood; and concrete. Notes are included on the advantages of each type of material. 4 pp. each, illus. Multi-Clean Products, Inc., 2277 Ford Parkway, St. Paul 1, Minn.

(*Continued on page 284*)

Here's what they say:

THE ARCHITECT

I choose plaster because it's sound construction. It's a one-piece, joint-free part of my walls and ceilings, regardless of their shape and size.

Fire-safe too, and when well done, it seems to last forever. For finishing lime I've long specified Ohio White Finish—it really has no equal.

THE BUILDER

If I have the choice . . . it's plaster every time. I've tried substitutes, but in carefully checking my costs, I've found there's no saving in using them.

And plaster always fits too, of course, with no waste of material left over.

THE BUILDING OWNER

I'll have plaster on my next job. Those true, smooth surfaces are more than just pleasing to the eye . . they're accoustically right, and sanitary.

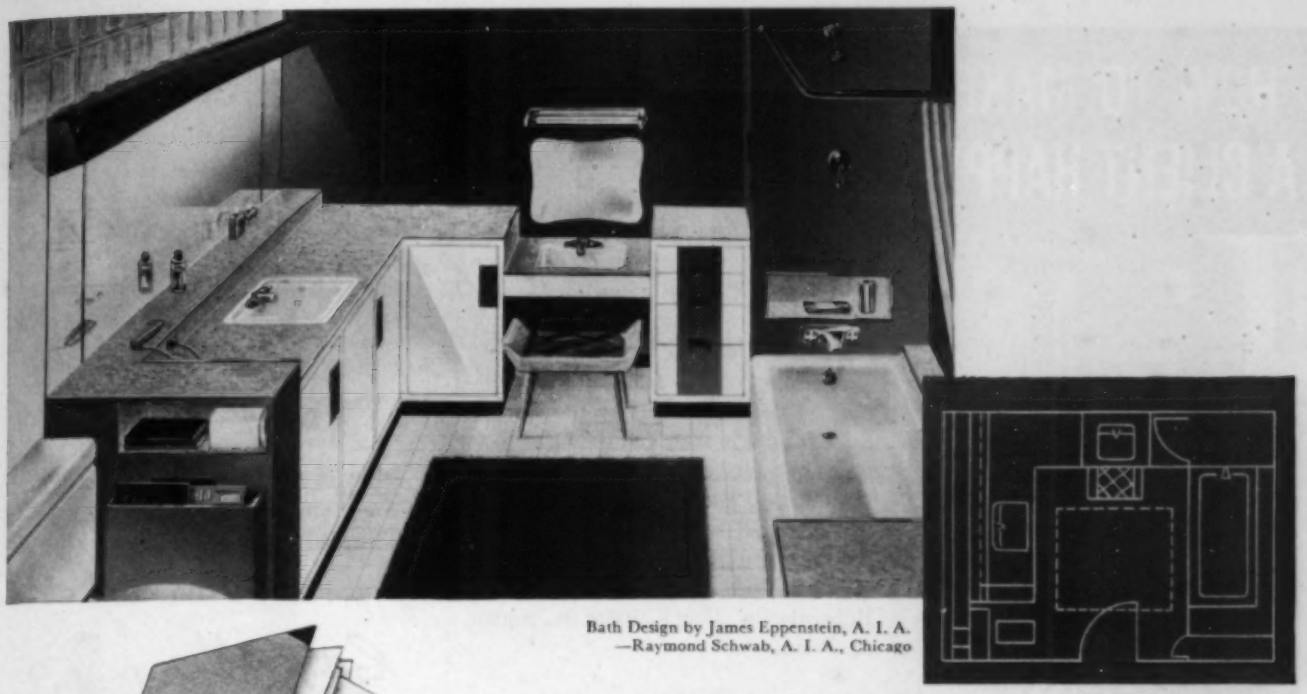
They may be decorated and re-decorated in various ways, economically, and that's a saving in the long run.

THE PLASTERER

Good workmanship requires the right stuff to work with. That's why I choose Ohio White Finish for my finishing coats. It has great plasticity.

You can feel this in the fatness of the lime putty, like we feel it in the workability under the trowel. Spreads farther too, covers more per bag, and that's economy.

The
OHIO HYDRATE
& SUPPLY Co.
WOODVILLE, OHIO



Bath Design by James Eppenstein, A. I. A.
—Raymond Schwab, A. I. A., Chicago

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